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## LOTUS IN FOCUS

Piquet's parting shots  
Chapman on Chapman  
Change and Challenge  
Lamborghini — bullish about F1

PLUS

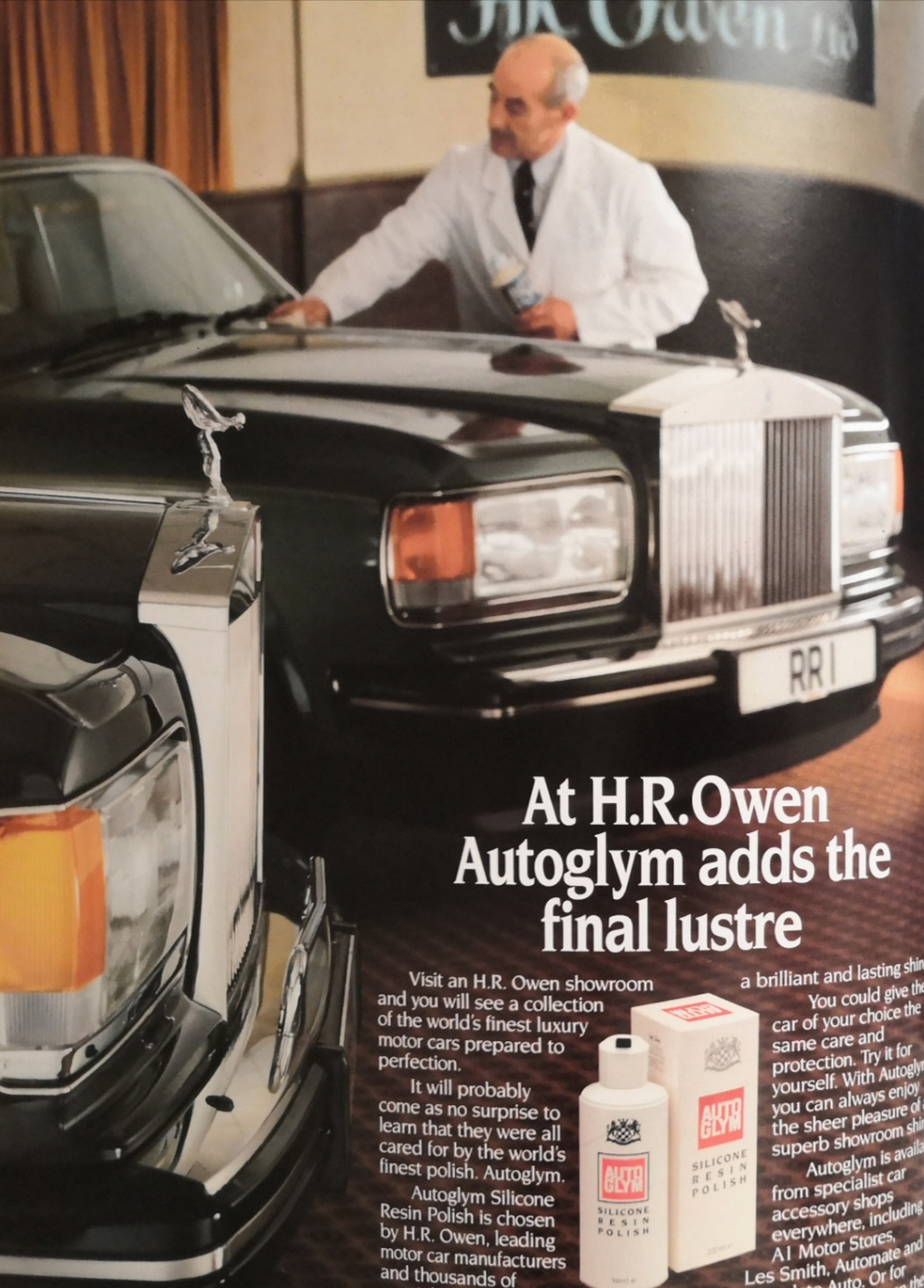
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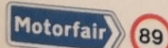






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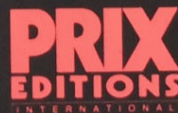
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(John Townsend)

# POLE POSITION

## THE EDITOR'S PAGE

One of the few pleasant memories of Estoril 1989 was the sight of Gerhard Berger on the top step of the podium. The popular Austrian has had a season of ill luck, but chose Monza to finish for the first time, and the next race to finish first. Berger, somehow, has remained aloof from the controversy surrounding a quality that used to be paramount in sport: team spirit.

McLaren, where Berger will work next year, chose Estoril to issue a release that centred on that very issue, and on Alain Prost's perception of his treatment by his team. Much emphasis was laid on old-fashioned values such as fairness and honesty, but the saddest fact of 1989 has been the accelerating decline of many of those values that once made this sport, like all sport, worth while.

Of course a Grand Prix driver is the loneliest sportsman in the world, and no-one in his right mind would dream of trading places with any of the 26 who line up 16 times a season for our benefit. Well, no: not really for our benefit, because the fact of the matter is that they are in there to derive the maximum benefit for themselves. Quite right, too: this, more than any other sporting career, threatens to be short-lived, so you might as well catch as much as you can of the money being thrown at you these days.

But that same Grand Prix driver is the vulnerable tip of a very large iceberg: a Grand Prix team, without which he would quite simply be unable to get in the car and drive round and round in pursuit of individual glory and considerable personal gain. Given all the attendant difficulties, it is baffling to witness the breakdown of team spirit in an environment where it would seem at least as important as one or two more horses.

Another basic fact of any Grand Prix driver's life is the need to beat his team-mate, since he is the most immediate yardstick by which performance can be measured in the most high-performance

sporting arena of them all. But drivers work within the framework of one and the same team: how can they expect to give of their best when they themselves have destroyed all hope of a harmonious working environment?

This issue of our magazine looks at teamwork in a variety of contexts. Many of its pages focus on the Lotus team — the team, as Hazel Chapman calls it — and wonder if a new sense of team spirit will be the vital ingredient in a recipe for reconstruction which thousands of F1 followers are eager to see succeed. A key axis in that rebuilding programme will be the relationship between new Lotus drivers Derek Warwick and Martin Donnelly, and if Derek's words quoted here are anything to go by, that axis is already solid and friendly.

Elsewhere, Jacques Laffite, himself one of the most popular drivers of recent times, ponders the Prost-Senna breakdown, looks back on his own time in the driving seat, and finds much to be sad about in the current state of affairs. One of Laffite's team-mates was the late Patrick Depailler, the title of whose autobiography translates loosely as 'Racing is a Battle-field'. While every driver has a duty to

himself to equip himself with the best weapons available to fight his own battles, surely there is a parallel obligation to the team and to the sport?

You try asking Rene Arnoux that question. Throughout the last few seasons he has been berated, seemingly from all sides, from within and without the sport, and rarely spoken out in self-defence. This issue gives Arnoux, through one of France's most respected journalists, the chance to answer back.

Ask any Grand Prix driver how his weekend's practice is going, and he will almost always refer to the need for balance. In the aftermath of Estoril, with talk of fines and suspensions in the air, there was not much sign of equilibrium in the Grand Prix vehicle itself. Team spirit might be one way to get it back; or, to use another word in vogue — and in a much more important game — a sense of solidarity?

STUART SYKES  
EDITOR

*Stuart Sykes*

Team-mates — but will it stand the acid test?



(LAT)



# Keeping Track

Unveiled prior to the Portuguese Grand Prix, where two examples were expected to appear: the long awaited Williams FW13, pictured here in its inaugural public run at Silverstone, Patrick Head's design featured a distinctive large air-box reminiscent of Formula One runners in the mid-Seventies. "It looks very aggressive", enthused Riccardo Patrese, "it reminds me of Concorde." The car, powered by Renault Sport's RS1 67° V10 engine, has a wheelbase of 115". FW13 put in six laps at Silverstone on Wednesday after Monza, a full day there on Thursday and ran at Pembrey in Wales on the Friday.



"Aggressive", in Riccardo Patrese's words - the new Williams FW13 at Silverstone (LAT)

On the Wednesday prior to the Belgian Grand Prix, Swiss businessman Joachim Luethi, believed to hold a controlling interest in the Brabham team, was arrested in Zurich and charged with attempting to defraud his customers of some \$100 million. According to the district attorney in the Swiss canton of Aargau, Luethi - co-chairman of a company called Adiuva Finanz - promised 2,000 investors a return of 3.5-20% on their money. The man himself has refused to talk to Swiss prosecutors. As Swiss law precludes the posting of bail in such cases, there he will remain until his case goes to court. Brabham team

director Herbie Blash, speaking as we went to press, said no charges had been brought against Mr Luethi and that in those circumstances there was no comment he could offer. He has already indicated, however, that the team has sufficient alternative funding to see out this season.

Gordon Message has succeeded Peter Collins as team manager at Benetton, with whom Collins parted company after four years in which Peter built the team up into one of the front-line challengers to McLaren's recent supremacy. Commercial matters are now in the hands of Flavio Briatori.

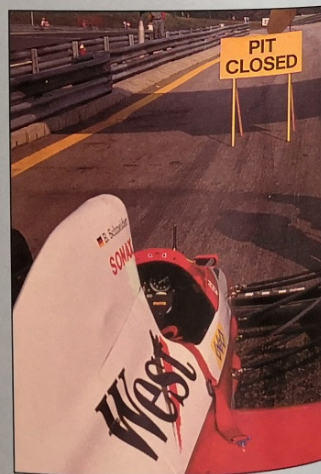
In other team moves... Engineer Ken Anderson who recently left Ligier has joined the Moneytron Onyx team. Onyx team manager Greg Field has left the team. Harry Mendel moved from Arrows to become team manager at Leyton House March. Engineer Michael Costa has returned to AGS after one year at Coloni.

Coming to America? Eddie Cheever and Philippe Alliot could be heading for the CART Indy Car series in 1990. Or Cheever may race one of Tom Walkinshaw's Jaguars in sports prototype competition.

Italian Piercarlo Ghinzani has announced that he will retire from Formula One at the end of the season. He is quitting because of "the absurdity of the present pre-qualifying regulations." He has always criticized the pre-qualifying system - the one hour session Friday morning which lets only the fastest four of 13 drivers advance to regular qualifying. This season he has only managed to

qualify for one Grand Prix. "I shall continue my profession as a driver in other categories where the regulations are fairer," Ghinzani said. A veteran of 74 Grand Prix starts, Ghinzani's best finish was a fifth at Dallas in 1984.

The Zakspeed team, which has failed to qualify for a single Grand Prix all season, is struggling for survival. It has already lost it's West backing for 1990, and word is that the team may not make the long haul to Japan and Australia to close out the 1989 season.



Spa saw the Rial debut of Pierre-Henri Raphanel, a fugitive from the Coloni team. Still no joy: he failed to qualify for the Belgian Grand Prix, but at least he has taken his sponsorship from French television channel La Cinq 5 with him as he replaces Volker Weidler. Former AGS and

Coloni designer Christian Vanderpleyn has also joined Rial, while Italy's Enrico Bertaggia has been a temporary stand in for Raphanel at Coloni.

Nicola Larini, who currently drives for Osella, has signed an option contract with Ferrari for three years beginning in 1991. It is said that McLaren director Ron Dennis has signed British Formula 3 star Alan McNish to a similar contract.

With the Ferrari seat taken by Prost, Riccardo Patrese will stay with the Canon Williams Renault team in 1990. He had been one of the top candidates for the Ferrari drive.



Happy to be staying at Williams: Riccardo Patrese (John Townsend)

At a press conference at Monza Camel Team Lotus announced a new package for 1990. British drivers Derek Warwick and Martin Donnelly will replace Nelson Piquet and Satoru Nakajima. The team will use Lamborghini V12 engines instead of the Judd V8 engines used this year. And Camel will continue to sponsor the team. "We investigated a lot of options," said W. Duncan Lee, Director of sponsorship for R.J. Reynolds (Camel) Tobacco International. "We feel that Lotus has the best potential to fill our plans."

Team Lotus (the racing team) has no connection with Group Lotus which builds Lotus road cars. Group Lotus is owned by General Motors. Lamborghini is owned by Chrysler.

Tony Rudd, who is the chairman for both the Lotus race team and the road car operation, said that being associated with two different manufacturers would present no conflict. At the press conference Lee talked about "possible connections with the (Lotus) parent group in the future." Does this mean that General Motors may be building a Formula One engine? Lotus will "lease" the engine from Lamborghini for 3.5 million dollars and the gearbox will cost another half a million dollars.

As for Camel partially sponsoring other teams in 1990 (as it does Tyrrell, Benetton and Lola this year), Lee said R.J. Reynolds has still to finalize its plans in that area.



The leaving of Lotus: John Judd (right) will not supply the Norfolk team in 1990. (Sporting Pictures)

Nelson Piquet will join Benetton Ford in 1990. Alessandro Nannini will remain with Benetton. Emanuele Pirro, who is driving in place of the injured Johnny Herbert, will have to look for another Formula One ride next year. Pirro, currently on loan to Benetton, remains under contract to McLaren as a test driver. Herbert will be Benetton's test driver in 1990.

"I am very happy that it worked out," said Ford's racing boss Michael Kranefuss. "I had a few discussions with Piquet; he wanted to know about Ford's future Formula One plans. I really think he is what the team needs - he is an experienced driver and he is still motivated." Most of Piquet's salary at Benetton will be paid based on the number of points he earns.

Twice world champion Alain Prost has ended months of speculation about his future by signing to drive for Ferrari in 1990.

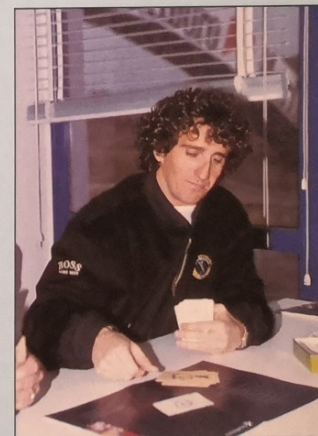
Ferrari made the announcement on the Wednesday prior to the Italian Grand Prix.

Prost's relationship with his McLaren teammate Ayrton Senna has deteriorated to the point where they no longer speak to each other. And that was one of the main reasons why Prost left McLaren.

"For me the thing that counts more than anything is to be happy," Prost said. "To go to Ferrari presents an opportunity to find new motivation and enthusiasm."

Mansell's contract at Ferrari for 1990 had given him "number one status". It marked the first time ever that Ferrari officially stated that a particular driver would be the number one.

Mansell, though, has agreed to share equal treatment with Prost. A telex from Ferrari stated that "Mansell and Prost will enjoy exactly the same treatment both in practice and races."



Dealing himself a trump card for 1990: Alain has signed for Ferrari (John Townsend)

USF&G Arrows, who are parting company with Derek Warwick and Eddie Cheever, have signed Michele Alboreto as number one driver for 1990. The 33-year-old Italian started this season with Tyrrell but switched to Larrousse at Hockenheim. As we went to press Arrows were still reviewing their options for a number two driver - with a fair possibility of an all-Italian line-up.



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Heuer 1000	£28.96	2.5k Plumbed-in kit	£69.50	Mobil 14 litre	£6.04
Heuer 7021 Timing board	£96.91	5.0k Plumbed-in kit	£87.00	Castrol Racing Fluid	£9.13
Heuer 7022 Timing board	£149.95	2.5k Lifeline kits	£105.00	Octane Booster 1 litre	£4.30
Raceparts Gauges	£14.50	Electrical	£147.50	Full range of Motax Brake Pads	
100lb pressure gauges	£14.50	5.0k Lifeline kits	£132.00	Tarox Discs & Pads Tilton & A.P.	
Oil temp gauge	£26.50	Mechanical	£179.95	Brake parts stocked	£48.00
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Dual gauge press/tem	£135.00	Novic square	£0.60	Facet Silver Comp	£25.50
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James Tachos	£140.00	Round & Square backings	£0.87	Facet Solid State STD	£25.50
Tacho cables	£12.50	Tank Tape Sil/Blk/Whit	£4.30	Filter King glass bowl	£19.95
Full Range of Smiths/Lucas Gauges Stocked	£34.00	Tank Tape Colours	£5.17	Filter King alloy bowl	£25.50
Digital Pyrometer probe	£95.00	Helicopter Tape	£7.95	10 Row Oil Coolers	£37.00
Hypodermic probe	£25.00	Ear Plugs in canister	£12.95	16 Row Oil Coolers	
Surface probe	£34.00	Bonnet Pins Heavy Duty	£1.00	Full range of oil cooling hoses	
Special Tyre Probe	£35.00	Sliding bonnet pins	£8.04	S/plate, filter heads & fittings	
Carry case for above	£12.95	Terrys spring clips	£5.17	Aerosol oil & brake lines & fittings in stock	
Master tyre press gauge	£19.95	Rubber Hooks large	£2.39		
R/P tyre press gauge	£21.00	Full range of Camloc Fasteners			
Neotech Digital T/Gauge	£42.00	Also Drus & Kaynar nuts clips & fasteners stocked. Ty-raps & mounting blocks in all sizes.			
Newbow SRT Press gauge	£30.50	California mirrors blk	£9.52		
Rallycom 3 Intercom	£90.00	California mirrors white	£19.30		
Procom Intercom	£45.50	Momo Racing S/Wheel	£72.50		
Sonic Intercoms	from £65.00	Italvalenti S/Wheel	£49.50		
Petrol Intercoms	from £145.00	Rad Racing Wheel	£35.00		
Digital Pit Boards	£17.25	Full range of Momo & Italvalenti			
Corsa Pit Board & numbers	£39.96				
Professional signal kit	£66.91				

## formula one accessories

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I'm sure A.A. Milne could have written a best selling children's story based on the Italian Grand Prix. He might not have fully understood the antics of certain people but the weekend would have assumed a more agreeable and comical slant had he taken a glass of wine or three at the Renault post-race barbecue in the paddock.

From there, for example, we were able to watch the Ferrari transporter attempt to take a short-cut through the back entrance. For Ferrari, most things are possible at Monza but this was literally pushing matters too far.

The Larrousse truck was in similar trouble further down the road, the driver somehow managing to adopt a jack-knife position, with the added complication of a tree both fore and aft of the stricken vehicle. He was, as Owl remarked when Winnie the Pooh became jammed in Rabbit's doorway, 'wedged in a great tightness. In a word, irremovable'.

Pooh, having made no bones about eating all of Rabbit's honey, had to remain stuck fast until he lost weight. I never did see the end of the Larrousse predicament. The transporter could still be there for all I know although, given the light-fingered nature of the Monza denizens, it would be a mere shell by now.

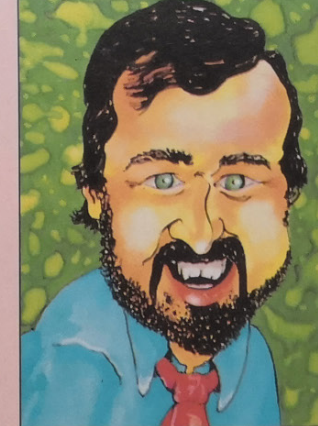
Ferrari solved their problem by removing a section of fencing to allow the truck to turn around in the car park opposite and then make a more dignified exit.

There wasn't much dignity attached to the departure of the Honda Marlboro McLaren team. Ayrton Senna's car had been manhandled through the crowd, po-faced Honda technicians hastily mopping up the copious amount of oil which had found its way onto the outside of the engine.

The driver of the other McLaren, meanwhile, was busy telling anyone who would listen that the engine which had just brought him nine points had not been as strong as Senna's. It seemed like Pooh Bear wailing because the pot of honey which had fallen from the shelf and smashed onto the floor was bigger than the one he had in his hand.

And all of this had followed an unpleasant little domestic scene when Ron Dennis had thrown his trophy at Alain Prost's feet, the Frenchman having already handed his silverware to the crowd. I'm surprised the fans, more accustomed to the thrill of the steal, didn't hand the cup back.

## ON THE OTHER HAND!



## THE MAURICE HAMILTON COLUMN

But I wonder if the recipient got out alive? And what if he took the cup to the pub that night and said the winner of the Italian Grand Prix had just given it to him? It would have been the same as nicking a Ferrari F40 and claiming you bought it for a song from a lady who said she simply wanted to annoy her husband.

Prost knew that Dennis likes to keep all his hard-earned silverware. Alain, clearly, was having a bit of a laugh; just the sort of thing Ron had been telling us about at Monaco when he insisted that Prost and Senna really do get on quite well. McLaren, he said, was a fun team.

Well, not any more it isn't. Laugh? I thought Ron was about to burst into tears.

Prost then administered another kick to the McLaren-Honda crotch at the post-race press conference. All he asked for was equal equipment and he didn't feel that was forthcoming. In other words, now that he had signed for Ferrari, he was not wanted

on voyage. The nine points earned at Monza amounted to excess baggage for McLaren and, even though he had won, the engine had not been good and Honda did not seem to be playing fair.

It was extremely difficult to know what to make of this lengthy monologue even though we half-expected it following his complaints about his engine during qualifying. According to Prost, we were the only people who had listened. Honda had done nothing and this was symptomatic of the treatment delivered to Nigel Mansell and Keke Rosberg in the past. In Mansell's case, Honda had favoured Piquet in 1987. As for Rosberg, he remains totally convinced that Honda began to influence his performance once they discovered he was leaving Williams at the end of 1985.

Yes, you say, but what about Keke's win at Adelaide? That was a clever tactic by Honda; give Rosberg a screamer, he wins by a mile and everyone wonders what he has been complaining about for the past few weeks.

That's the theory. Doubtless Prost had all of this in mind at Monza and he seemed intent on pre-empting anything Honda might do by unburdening himself of his worries. And pretty mournful listening it was too. But you have to admit that, from Monza on, the world watched and waited with more interest than before.

The slightest hiccup in the beat of his V10 and elbows would start nudging ribs, fingers would begin tapping noses. 'Prost's right,' we'd say.

But is he? The media, whose job it is to relay this news to you, couldn't distinguish a dodgy engine any more than the England cricket selectors seem capable of recognising a decent First XI. Certainly, we didn't need a degree in mathematics to see that Senna was 1.79 seconds faster than Prost during practice at Monza.

So here was a sign that the most successful driver of all time had an engine which was difficult to drive at low revs. But there were also indications that Ayrton Senna is actually a faster driver — and Alain Prost is finding that difficult to take. Okay, maybe Senna is not that good and Prost did have a problem. But how much of it was self-inflicted? I certainly don't know the answer.

Then Prost said his car was not very quick in the early stages of the race. Again, there was evidence of that and you have to accept Alain's word. But how do we really know? I would



suggest that we can't, hand on heart, say Alain Prost was being screwed by Honda any more than Ron Dennis can claim he knows *everything* his Japanese partners are doing. Ron can produce all the paperwork and technical evidence he likes but I refuse to believe there is not scope for manipulation of some sort or another should Honda care to indulge in the subterfuge which Prost believed to be taking place at Monza.

Honda claim that both drivers had identical power during the race at Monza. They apparently have readouts to prove it. It's a pity they didn't make these available even though they would not answer Prost's continual complaint that his engine was difficult to drive at low revs.

Honda claim that is due to differences in driving style; Ayrton preferring to continually jab at the throttle as he keeps the revs high while entering a corner. It may offend the likes of Jackie "gently on the throttle, squeeze in the power" Stewart but, according to Honda, that's how Ayrton gets the most out of his V10. And it's interesting that Prost occasionally had trouble driving the TAG turbo on tight circuits. Perhaps his driving style is indeed too smooth for his own good.

So where does that leave us? At a press conference where we listen to a nasal Frenchman dismember a celebration and turn it into a wake.

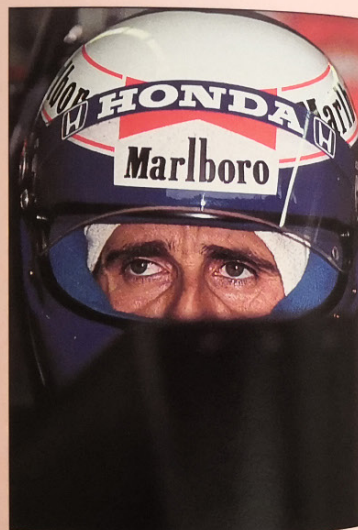
And that's another thing. Why accept nine points with such bad grace? Well, if Prost is correct, then this was indeed the best moment to choose. Say it had been his engine which had blown, any subsequent complaints would have been seen as sour grapes by Prost as Senna went on to win and bring the championship gap down to just two points. The way things turned out, he was speaking with candour from a position of strength. I just wish he had not laboured the point.

And, judging by the bemused expressions of the McLaren mechanics, they felt the same. The problem was that some of the criticism had reflected on the lads in the team even though Prost may not have meant his comments to create such an impression. Certainly, there had been a remarkable turnaround in a once warm and friendly relationship.

Before practice began, the mechanics stuck a Ferrari badge on his car and left a bottle of Italian wine in the cockpit. It was meant to be a light-hearted gesture but, by all accounts, Prost did not see it that way. And things went downhill from that point on.

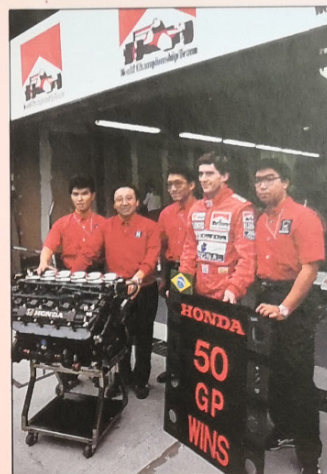


Above: Would you park your transporter anywhere within reach? (LAT)



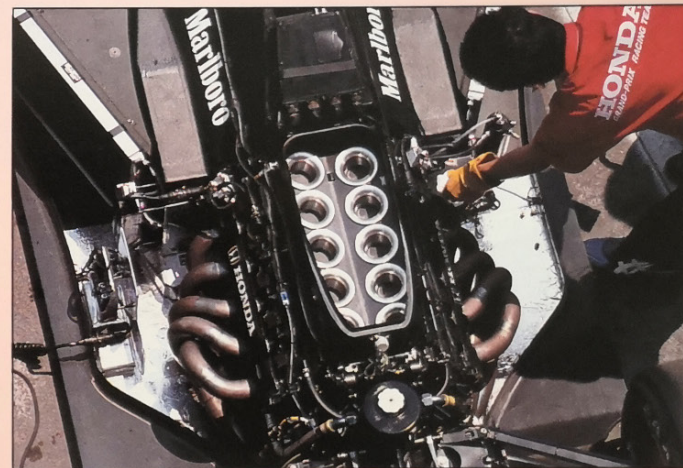
Right: Prost may have won, but there were dark looks and equally dark mutterings... (Allsport/Pascal Rondeau)

Below: The moment that may have cemented a divorce: Prost drops his trophy to the tifosi (Sporting Pictures)



Above: Senna at least had something to celebrate — the legacy of his Spa victory (Sutton Photographic)  
Top right: Rosberg, Williams-Honda, 1985. He backs up Prost's concern over engine equality (Allsport/Vandystadt)

Centre right: Who really knows what goes on in there? (Sutton Photographic)  
Bottom right: Together already — the first time Prost has smiled in a 'teammate's' company for months (Allsport/Vandystadt)



Now the McLaren team see Prost as having betrayed them; a Judas who has taken all the McLaren and Honda secrets to their main rival. So what's new in Formula One?

Well, the feeling was that Alain was going to take a sabbatical in 1990 and come back to 'his' team the following year. Whether it was Prost or an over-confident McLaren management who put forward this theory is difficult to say. Either way, the six-year old family partnership was dissolved in a bath of acid at Monza. So we finished the weekend at Renault, emptying the contents of several glasses and attempting to understand Grand Prix racing as it heads towards the Nineties. The barbecue, ironically, was a throwback to more easy-going times when, with the day's work done, everyone would stop and socialise. The thought of rushing home for a candle-lit dinner with your PR executive would have been as unacceptable as a morose winner. Ferrari must be wondering just what they have let themselves in for. Prost insists he always tells the truth. It's a highly commendable virtue, one which Pooh Bear espoused with great enthusiasm. And look what it did for him. ■







When the trophy landed at his feet, Alain Prost realised that he had just made a tactical error that might well have put the final hex on his relationship with Ron Dennis. It was the capping for a weekend in which his 'friendships' underwent quite dramatic reversals. Once upon a time, the Italian tifosi loathed Prost. Hated him so much that they gave vent to their feelings by stoning him in 1983. Times change, but nothing in motor racing changes quite so quickly as the feelings of the fickle tifosi. A year ago Gerhard Berger was the hero of Italy, the victor for Ferrari against the hated McLaren Honda empire. The Austrian was the man who had bought honour back a month after the death of the great Enzo Ferrari himself. This year everything was different. True, the tifosi had cheered themselves hoarse when Berger and 'Lion Nigel' Mansell stomped on the McLarens in the first official qualifying session, but in the warm-up laps prior to the race, it was Prost who got the great cheer. And when the Frenchman finally squeezed past Berger for second place going into the first chicane on lap 41, the move erased any indecision that there had been in

their minds as he began to close in. This was okay. Here was the 1990 Ferrari driver passing the traitor who was going to defect to McLaren. The greatest cheer came only four laps later, when the diamond screens relayed the sight of the dominant Ayrton Senna coasting slowly down to the Parabolica, his Honda engine pluming a cloud of smoke before the MP4/5 slithered wildly into a spin as oil spewed on to its rear Goodyears. They liked that, the tifosi. They liked it a lot. Even though a McLaren Honda was going to beat a Ferrari into second place, they didn't mind now, because Alain Prost was driving it. And Prost raised himself even more in their newly revised estimation when he lowered his trophy into their greedy hands as he stood on the rostrum, a man in the greatest emotional turmoil of his career. It was all too much for Dennis. All weekend he had bitten his tongue as Alain had complained of poor engines and poor chassis set-ups. He threw his own trophy at Prost's feet, before storming off. Alain, realising too late his lack of tact, promptly ran after him.

Neither disclosed what was said subsequently, but where Prost still has affection for, and loyalty to, the man he once regarded as a close friend and confidant, it is becoming increasingly clear that the McLaren boss has had enough. At McLaren, trophies are a tangible sign of success. Take a look in the reception area at the Woking factory and you'll see what I mean. Giving a McLaren trophy away to the Ferrari tifosi was just too much, tantamount to betrayal. Ironically, the real action at Monza came after the race, rather as it had in Imola when all the real aggravation that has blown McLaren apart this year first erupted. Whatever Alain said to Ron after the rostrum incident didn't prevent him speaking his mind in the post-race interviews. And say what you wish about the little Frenchman, he always tells the truth. He may be wrong, he may have based his assessments on faulty premises, but what he says is always the truth as he believes it to be. "I want to race and compete with Senna with the same equipment," he stated, instantly rekindling the mid-season drama that was enacted after Mexico. You could almost hear Honda's screams away down

the paddock. The Japanese company had gone to great lengths to 'explain' how he had been changing gear too early etc. in the immediate aftermath of that acrimony, and here was Prost coming out with the same 'lack of equal equipment' stuff all over again. "My engine had nothing like the power of Senna's. Ask Mansell or Boutsen," said Prost. And indeed, both echoed his sentiments, having been right on his tail in the early stages. That was partly due to Alain feeling his way on new settings, having opted for Senna's just prior to the start, but after Ayrton had smashed everyone else in qualifying by finding 1.3s between Friday and Saturday - and ending up 1.79s faster than Prost - there was no shortage of paddock suspicion. "Five clicks faster than Prost on the straight? It's obvious what they're doing," said Mansell immediately, Keke Rosberg agreed. Both believe Honda favoured their teammates at times when they had driven for Williams. "Saturday was a slower day than Friday, yet McLaren still found 1.3 seconds..." said a rival designer, letting his words hang in the air. Ron Dennis was sufficiently moved to call a Fleet Street press conference to stress how equal the machinery is, while Osamu Goto retained his inscrutability having spelled it out to the specialist press in Hockenheim prior to erasing their faces from his memory bank. There were those quick to point out Prost's political nature, and to suggest his complaints were designed to dissuade either McLaren or Honda from even considering favouring Senna in the final four races. Both companies are adamant they haven't been, nor will be, but Jean-Marie Balestre threw his own can of gasoline onto the fire - just as he did last year - by saying on the rostrum how wonderful it was that Prost had won in a car with 20bhp less than Senna's. Some observers pointed to Prost's fastest lap - 1m 28.107s - which was achieved on lap 43, when Senna's race best was 1m 28.179s. On paper, it suggested Prost had been exaggerating. But from the start Ayrton admitted he wasn't using full revs even as he pulled away, and that from lap 40 the oil light had been flashing an ominous warning. He had eased up even further, but nothing could prevent the lubricating oil getting on the

wrong side of the Specification Four V10 and yet again Monza became his nemesis on lap 45. Gerhard Berger was probably the one truly happy man on the rostrum, since it was the first time since Suzuka 1988 that his Ferrari had actually been around for the end of a race. He'd delighted the tifosi with provisional pole on Friday, even though he didn't get the latest spec qualifying engine until Saturday. Mansell had his on Friday, and was five thousandths adrift. Both were slower on Saturday, when Senna found all that speed, but though Gerhard lost morning warm-up time because a gearbox bush broke up, his car ran reliably to the flag. If he felt his equipment wasn't the equal of his team-mate's, he certainly wasn't saying. "I didn't drive as hard as I normally do," he admitted, "and seventh gear was slow to engage, but after all those retirements I really needed to finish. After a bit, your confidence begins to be affected." From the start, Mansell's Formula One/89 had a gearbox problem as the electro-hydraulic system was losing pressure after an O-ring had nipped during assembly. As the race progressed that made gearshifts harder and harder. On lap 21 he finally succumbed to Prost, and on lap 42, just after Boutsen had muscled past at the second chicane after chasing him energetically all afternoon, the transmission's pressure dropped altogether. Third was also disappointing for Williams, after Patrese had quali-

fied in the 25s, right near Prost. The FW12Cs were clearly close to the end of their development road in Monza, with FW13 finally due to run for the first time at Silverstone the following Wednesday, but at least they were reliable and could both run 1m 28s fastest laps. Using another evolution engine, Boutsen stayed clear of his team-mate, who was troubled by a handling imbalance that pulled the car violently to the right whenever he backed off, and later by a worn out rear Goodyear. On Saturday Tyrrell's prospects had looked bleak. Jean Alesi's Friday afternoon times had been disallowed when his rear wing was found fractionally to infringe the endplate regulations, and it was raining when he climbed out of bed that morning. However, things dried out by the afternoon and he qualified an excellent 10th. Make no mistake, the young Frenchman clearly has a mass of talent. He duly bought his 018 home fifth in a clean drive that saw him resist attacks from Martin Brundle, Nelson Piquet and Ivan Capelli. All three got close, and the Italian even edged ahead on lap 16, but wisely Jean did not try to retaliate and simply kept up his own pace. Capelli had made a storming start, like team-mate Gugelmin the only driver apart from Pirro (Cs all round) to decide against full Goodyear Bs. After their qualifying aggravation, both Leyton House March racers opted for a mix of Bs on the left and softer Cs on the right. Ivan was flying in eighth - a position that ultimately would have

At last Berger made the sparks fly - all the way to the rostrum



Alonso Pascal Rondeau



reaped him fifth - when his Judd EV blew up on lap 31.

Piquet's charge was blighted by a clutch fault that developed as the team changed his engine after the morning warm-up, and his race ended when Gachot got the second Lesmo wrong in the ill-balanced Onyx after a stop for fresh tyres and left the Brazilian with nowhere to go but the Armco.

Initially, Sandro Nannini had flown the Benetton flag in a Boutsen hounding sixth (Pirro having been elbowing off on the first lap and lost all drive as a result), but following the Williams rooted his front tyres and after a very quick stop he had repassed Capelli for seventh when his brakes expired.

That left Brundle a clear run to sixth, and his and Brabham's first point since Monaco. That was some consolation, since Stefano Modena had been disqualified from his 16th grid slot for failing to stop for a mandatory weight check on Saturday afternoon. With his tyres rotating on the rims, Brundle couldn't challenge Alesi, but he was nonetheless the best placed Pirelli user.

Pierluigi Martini, and the Dallara duo of Caffi and de Cesaris had staged one of the race's few real battles for seventh in the closing stages, the M189 slightly off-tune after a first lap clash with Alboreto's Lola, but though both red cars passed the Minardi, both suffered late engine failures, so Piero duly took the place from team-mate Luis Sala, who was promoted to the race by Modena's exclusion.

Lola took nothing home after Alliot again impressed with seventh fastest qualifying time, a sticking throttle taking him out on lap two. Alboreto lasted only until lap 15, as he defended 13th place from a gaggle comprising Warwick, Grouillard, the Dallaras and Larini's Osella, when the electrics cut out.

Engine failures claimed Warwick and Jonathan Palmer, who started from the back after stalling on the formation lap, while Grouillard and Larini had gearbox dramas.

If Monza produced a dull contest, it certainly packed a post-race punch whose reverberations were felt from Italy to Japan via England. It may have provided Prost with his 39th career success, won McLaren another Constructors' Championship and drawn it level in the win stakes with Lotus' 79, but none of these closely involved

with the teams drew the slightest pleasure from it. History instead may well remember it as the race that finally smashed Prost's relationship with the team he once regarded as 'family'. ■

But Boutsen - and a broken gearbox - hounded Mansell out of contention in Nigel's first Ferrari race at Monza



The brilliant young Alesi made his mark again



Back in the points - Brundle kept his own promise by taking sixth place





1989 FORMULA ONE GRAND PRIX  
ROUND TWELVE

## ITALY

Autodromo Nazionale di Monza

10th September 1989

Circuit Length: 3.604 miles/5.799 km

Laps: 53

### Drivers' World Championship

Pos	Driver	Total
1	Alain Prost	71
2	Ayrton Senna	51
3	Nigel Mansell	38
4	Riccardo Patrese	28
5	Thierry Boutsen	24
6	Alessandro Nannini	14
7	Nelson Piquet	9
8	Michele Alboreto	6
	Gerhard Berger	6
	Eddie Cheever	6
	Derek Warwick	6
12	Jean Alesi	5
	Johnny Herbert	5
14	Alex Caffi	4
	Andrea De Cesaris	4
	Mauricio Gugelmin	4
	Stefano Modena	4
18	Christian Danner	3
19	René Arnoux	2
	Martin Brundle	2
	Stefan Johansson	2
	Pierluigi Martini	2
23	Olivier Grouillard	1
	Jonathan Palmer	1
	Luis-Perez Sala	1
	Gabriele Tarquini	1

### Constructors' World Championship

Pos	Team	Total
1	McLaren	122
2	Williams	52
3	Ferrari	44
4	Benetton	19
5	Arrows	12
	Tyrrell	12
7	Lotus	9
8	Dallara	8
9	Brabham	6
10	Leyton House	4
11	Ligier	3
	Minardi	3
	Rial	3
14	Onyx	2
15	AGS	1

### Official Starting Grid

Ayrton Senna McLaren-Honda	1.23.720	1	Gerhard Berger Ferrari	1.24.734	28
Nigel Mansell Ferrari	1.24.739	27	Alain Prost McLaren-Honda	1.25.510	2
Riccardo Patrese Williams-Renault	1.25.545	6	Thierry Boutsen Williams-Renault	1.26.155	5
Philippe Alliot Lola-Lamborghini	1.26.985	30	Alessandro Nannini Benetton-Ford	1.27.052	19
Emanuele Pirro Benetton-Ford	1.27.397	20	Jean Alesi Tyrrell-DFR	1.27.399	4
Nelson Piquet Lotus-Judd	1.27.508	11	Martin Brundle Brabham-Judd	1.27.627	7
Michele Alboreto Lola-Lamborghini	1.27.803	29	Jonathan Palmer Tyrrell-DFR	1.27.822	3
Pierluigi Martini Minardi-DFR	1.27.923	23	Derek Warwick Arrows-DFR	1.28.092	9
Andrea De Cesaris Dallara-DFR	1.28.129	22	Ivan Capelli Leyton House-Judd	1.28.430	16
Satoru Nakajima Lotus-Judd	1.28.441	12	Alex Caffi Dallara-DFR	1.28.596	21
Olivier Grouillard Ligier-DFR	1.28.669	26	Bertrand Gachot Onyx-DFR	1.28.684	37
René Arnoux Ligier-DFR	1.28.685	25	Nicola Larini Osella-DFR	1.28.773	17
Mauricio Gugelmin Leyton House-Judd	1.28.923	15	Luis-Perez Sala Minardi-DFR	1.29.293	24

### Race Classification

Pos	Driver	No.	Nat.	Car	Laps	Time/Retirement
1	A. Prost	2	Fra	McLaren-Honda	53	1.19.27.550
2	G. Berger	28	Aut	Ferrari	53	1.19.34.876
3	T. Boutsen	5	Bel	Williams-Renault	53	1.19.42.525
4	R. Patrese	6	Ita	Williams-Renault	53	1.20.06.272
5	J. Alesi	4	Fra	Tyrrell-DFR	52	
6	M. Brundle	7	GB	Brabham-Judd	52	
7	P. Martini	23	Ita	Minardi-DFR	52	
8	L. Sala	24	Spa	Minardi-DFR	51	
9	R. Arnoux	25	Fra	Ligier-DFR	51	
10	S. Nakajima	12	Jap	Lotus-Judd	51	
11	A. Caffi	21	Ita	Dallara-DFR	47	
R	A. De Cesaris	22	Ita	Dallara-DFR	45	Engine
R	A. Senna	1	Bra	McLaren-Honda	44	Spun
R	N. Mansell	27	GB	Ferrari	41	Gearbox
R	B. Gachot	37	Bel	Onyx-DFR	38	Overheated Engine
R	A. Nannini	19	Ita	Benetton-Ford	33	Brakes
R	I. Capelli	16	Ita	Leyton House-Judd	30	Engine
R	O. Grouillard	26	Fra	Ligier-DFR	30	Broken exhaust
R	N. Piquet	11	Bra	Lotus-Judd	23	Spun
R	J. Palmer	3	GB	Tyrrell-DFR	18	Engine
R	D. Warwick	9	GB	Arrows-DFR	18	Engine cut-out
R	N. Larini	17	Ita	Osella-DFR	16	Gearbox
R	M. Alboreto	29	Ita	Lola-Lamborghini	14	Electrics
R	M. Gugelmin	15	Bra	Leyton House-Judd	14	Mechanical
R	P. Alliot	30	Fra	Lola-Lamborghini	1	Stuck throttle
R	E. Pirro	20	Ita	Benetton-Ford	0	Transmission

Fastest Lap: Alain Prost 1.28.107, 147.259 mph/236.985 km/h

### Non Qualifiers

No.	Name	Car
10	E. Cheever	Arrows-DFR
38	C. Danner	Rial-DFR
39	P. H. Raphanel	Rial-DFR

\*S. Modena (No. 8 Brabham-Judd) — excluded from race due to weigh-in infringement

### Non-Pre Qualifiers

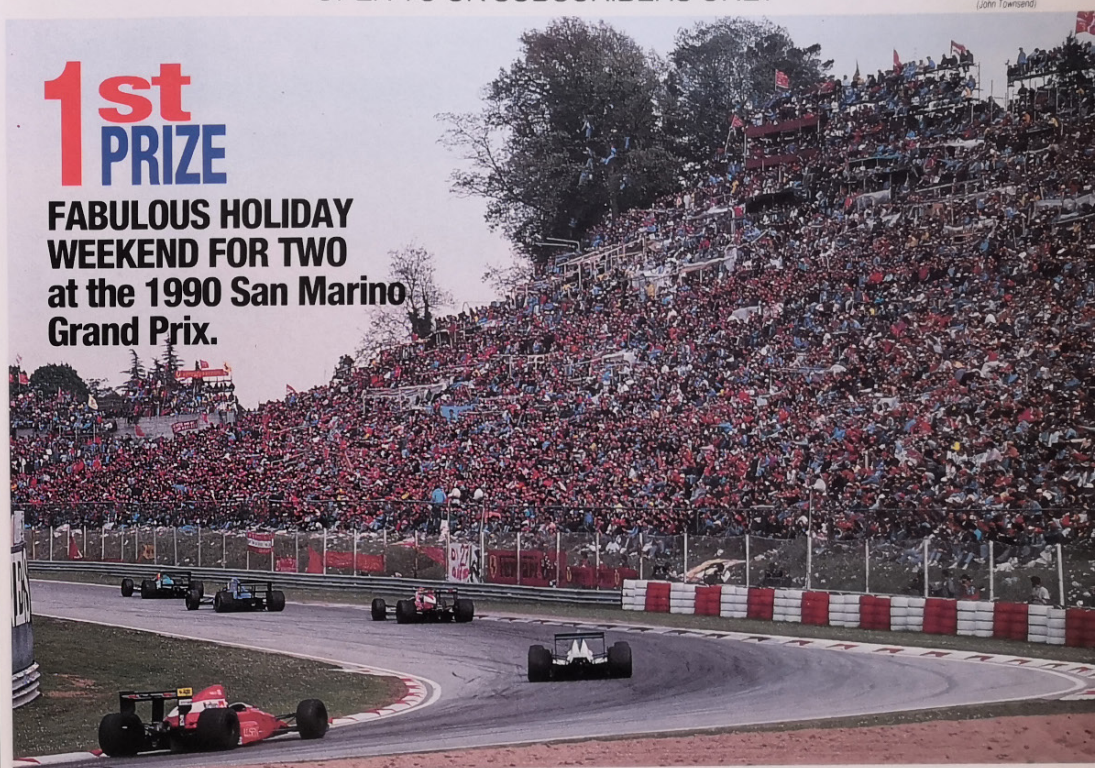
No.	Name	Car
36	S. Johansson	Onyx-DFR
40	G. Tarquini	AGS-DFR
31	R. Moreno	Coloni-DFR
18	P. Ghinzani	Osella-DFR
34	B. Schneider	Zakspeed-Yamaha
35	A. Suzuki	Zakspeed-Yamaha
33	N. Larrauri	EuroBrun-Judd
41	Y. Dalmas	AGS-DFR
32	E. Bertaggia	Coloni-DFR

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The sun shone on Minardi all weekend

(LAT)

Why didn't they tell Senna? It almost sounds like something Agatha Christie might have knocked up in her spare time, but it became one of the most germane questions in a vexed weekend.

Why didn't McLaren tell its driver not to fight Nigel Mansell with all the ferocity of a man watching his World Championship aspirations take a turn for the worst?

For its first half the Portuguese Grand Prix had looked every inch a winner, from the moments Senna planted his McLaren on pole on Friday afternoon and the Ferraris had got within spitting distance of it the following day.

Round Estoril, both Mansell and Berger had rated their chances. John Barnard's Ferrari was the best handling piece of kit in the place, and its 10-15bhp deficit on the McLaren-Hondas would be minimised. Berger, in fighting form as ever, got the all important jump on Senna at the start, and then blitzed into a nine second lead by the ninth lap. Mansell, meantime, was shaping up behind Senna, and piled past the Brazilian on the inside as they entered turn one on lap eight. The Ferraris were running away. Berger, however, had by his own

admission beaten up his tyres going so hard on a full fuel load. Bit by bit, in a race in which tyre stops were expected for almost everyone, the Briton began to eat into his team-mate's advantage. It was down to 0.70s by lap 23, and two laps later Mansell was the new leader. Just as he had in Hungary, he was driving beautifully.

Alain Prost, canny all weekend and not prepared to let anything upset his softly, softly approach to a third World Championship, was hanging back in fourth, nursing a slight engine fluff and incorrect tyre pressures, but he was happy enough. With the latter problem, he became the first serious Goodyear runner to pit for fresh rubber, dropping to eighth at the end of lap 28.

By then, Mansell, Berger and Senna were equally spaced, the Brazilian in particular making serious efforts and seeing some reward as all three ran nose to tail. This was shaping up to be a cracker!

Berger quit first for tyres, Ferrari dispatching him in a brilliant sub-7 second stop. That was at the end of lap 34. At the end of lap 35 Senna came in, but his stop was problematic, as it had been in Germany. Suddenly,

Mansell was looking even better. Until his fated stop at the end of lap 39.

He blasted into the pit lane too fast, was sliding just at the point he should have been turning right into his slot near the top end. The front wheels locked momentarily, and the Ferrari skated towards its anxious crew. As Mansell released the brakes and regained steering control, he was able to jink out and round, and then waited patiently for the pull back that never came.

It was his first mistake of a perfect year. A Ferrari official then motioned him back under his own power, and unwisely he complied, selecting reverse and backing up. The stop took 20 agonising seconds, and he resumed fourth, all his advantage gone.

Worse, he had committed one of the cardinal pit lane regulation infringements in reversing under power. It could only be a matter of time before he was black-flagged.

The Portuguese Grand Prix had just jumped into the handcart ready for its trip to hell.

If race officials had gotten the flag out early enough, it might have been little problem. Instead, it was not until lap

46 that it was held stationary by the start/finish line, and Mansell apparently ignored it for three laps.

What was actually happening within the Ferrari's cockpit was that Nigel was concentrating ferociously on the battle with Senna that had become well and truly enjoined on lap 45. By 46 he was right beneath the McLaren's rear wing.

Afterwards, both he and Senna said they hadn't seen the flag. When it was shown three times? What is this? These are the best racing drivers in the world, and they don't see a black flag? Let's consider this a moment. The flag is a dark colour. It was held first by the pit wall, then the overhead gantry. The sun was shining into the drivers' eyes down the main straight. And Senna and Mansell were topping 190mph, literally inches apart. If you were that close to another driver at 70mph in the outside lane of the M1, could you honestly say you'd see a signal from somebody standing in the opposite middle lane?

Mansell, of course, should have known he'd infringed the regulations, but in the heat of the battle...

The end came in spectacular fashion on lap 49. Going down to turn one Mansell was right in Senna's draught, pulled out and speared down the inside. He was all but through when Ayrton swooped across on his line, and the two made violent contact before heading at speed into the gravel bed. Both were out on the spot.

'He risked everything trying to overtake me on the inside,' said Senna. 'He couldn't take the curve. He was too far in.'

Mansell was adamant the move was kosher. Hadn't he successfully pulled the same manoeuvre on Senna on lap eight? And hadn't lesser lights such as Andrea De Cesaris and Satoru Nakajima pulled similar moves on Derek Warwick and Michele Alboreto earlier on?

The controversy that ensued knew no bounds. McLaren's Creighton Brown wanted Mansell's licence suspended. One or two of the Honda contingent looked as if they wanted him shipped home to build a few bridges. Jean-Marie Balestre spoke immediately of a one-race ban and a \$50,000 fine. By the Tuesday evening, both had been confirmed.

But just who was in the wrong? The answer was both drivers and both teams.

Mansell clearly made the original mistake by overshooting his pit. He and Ferrari both then mutually erred by reversing. Ferrari then sinned further



The moment a great race ended: Senna and Mansell bite the dust

(Allsport/Vandystadt)

er by failing to communicate to him the need to stop, and Mansell compounded his errors by failing to see the flag.

Senna was in the wrong with the move he made on lap 49, since he had already lost the corner. Mansell was already there.

But what of McLaren? Here was its star driver, still fighting for the championship. Yet being allowed to think everything depended on resisting the challenge from a man who, even had he finished ahead on the road, would have been disqualified immediately in any case...

Top teams and top drivers they may be, but none of them came away from Estoril with any credit at the end of a black day.

Poor old Berger's fifth Grand Prix success didn't exactly go unnoticed, but it didn't get the attention it merited. In all truthfulness, he probably wouldn't have resisted Mansell's charge, but that was by then irrelevant. Mansell was history. He'd

made the mistakes, and Gerhard hadn't. His win was fully deserved, and made up for all the disappointments he's endured so far this season.

Prost, meanwhile, doubtless chuckling into his balaclava all the way, settled sensibly for second, over half a minute adrift of the man he'd beaten in the same race two years ago. Somebody pointed out that every time Alain has won in Estoril, he hasn't gone on to win the title, but he has whenever he hasn't won. If the pattern continued, he wasn't complaining...

And third? Stefan Johansson drove an excellent race for Onyx. Like Sandro Nannini, who would struggle home fourth behind him in an ill-handling Benetton, the Swede made the distance non-stop as Mike Earle and he closely monitored his tyre wear.

Stefan had driven aggressively from the start, and was a firm fourth behind Riccardo Patrese's recovering new Williams FW13 on lap 60, after the Italian had made his tyre stop. With more power and fresher rubber, Riccardo

Berger's fifth victory was ultimately untroubled

(Allsport/Pascal Rondeau)







Sweet success for Swede Stefan: Onyx on the rostrum



(LAT) Eagerly awaited, finally overheated: the Williams-Renault FW13s

went by easily, but the Williams is currently a very tricky car to set-up properly, and Stefan was keeping ahead of Thierry Boutsen even though the Belgian was beginning to make inroads.

Patrick Head's new cars were showing promise, but in the cockpits the gauges were signalling alarm as the water temperatures climbed ever higher as the radiator ducts became clogged with debris. Both cars stopped with terminally overheated Renault V10s, Boutsen at the end of lap 60, Riccardo on lap 61.

Even running out of fuel on the slow-down lap didn't spoil Johansson's great day, even if Balestre did admonish him later for failing to get on the rostrum in time. After all the effort he'd put in, Stefan would hardly have tarried deliberately...

If Berger and Johansson deserved accolades, spare a thought for Pierluigi Martini. He had staggered onlookers with third fastest time on Friday in the SCM Minardi, and that held up for fifth on the grid. Against expectations, he held that place ahead of both Williams, and stayed there despite their intense pressure. And as Prost, Berger and then Senna pitted for tyres, he moved smoothly up to second. For a brief moment that the Minardi mechanics later treasured, he even led a Grand prix on lap 40 as Mansell made his stop!

Berger soon deposed him, but it was a marvellous achievement for both Piero and Giancarlo Minardi's eager little team. As the race progressed, Martini's neck began to give out, and his replacement set of Pirellis didn't have the grip of the first, but fifth place was thoroughly merited and a great fillip, although a totally just world would have given him third...

In the acrimony there was also brightness for Jonathan Palmer, as he drove quickly and well to grab the final point

for Tyrrell. In the absence of non-qualifying team-mate-for-the-race Johnny Herbert (Alesi was busy clinching the European F3000 title at Le Mans and JH suffered food poisoning), Palmer was able to regain some of his old confidence and was delighted that his effort had finally reaped something worthwhile after a career-damaging season.

Senna and Mansell weren't the only ones to exit after contact in a fairly bloody race. Alex Caffi and Nelson Piquet eliminated themselves for a fight for 11th (and possibly that final championship point) when they tangled on lap 34, and Derek Warwick damaged the nose of his Arrows by hitting the back of Luis Sala's Minardi as the Spaniard missed a shift. As he struggled back to the pits Derek had a sizeable shunt as a result of the lost downforce, and nearly took out Philippe Alliot's Lola as he staggered off the course.

For Gerard Larrousse's Lola camp there was the promise of a new sponsorship deal with the Japanese ESPO Corporation, and light at the end of the tunnel as both Alliot and Alboreto made a race finish, but De Cesaris added to Dallara's woe by retiring with electro-

Compare and contrast: Herbert (left) was ill and did not qualify, Palmer felt better after a second point for Tyrrell



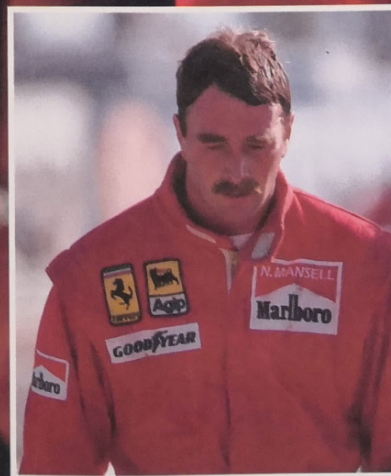
nic failure, and Sala failed to live up to his qualifying promise in the second Minardi and blamed a duff original set of tyres.

In fact, much of Pirelli's Estoril qualifying promise evaporated early, all but Martini going backwards as soon as the race started. Brundle stopped twice for tyres, and Modena once, but though both were happy with their cars, each felt his chances had been killed by his rubber. Brundle came back strongly at Nakajima at the end, but the Japanese, who had driven really strongly to come from 26th on lap one to seventh, had enough in hand.

For March there was to be no repeat of Capelli's fantastic 1988 result, the Italian retiring early with engine failure when running behind team-mate Gugelmin, who survived poor handling for tenth between the Lolas. Rene Arnoux drove an uninspiring race to 13th, but at least he qualified; team-mate Olivier Grouillard stayed on the sidelines, Pirro was also out of luck after qualifying close to Nannini, a seized damper killing his chances, while Roberto Moreno and Eddie Cheever fared no better in the race than in qualifying.

The Brazilian had run really well for 15th on the grid, but then vaulted over Cheever's Arrows in a misunderstanding. In the race he quit with a recurrent misfire, while Eddie hit the wall when his Arrows' engine cut and then chimed in at an inopportune moment.

For Prost, then, things looked rosy as he headed for Jerez. He had to win but one of the final three races to clinch the championship, whereas Senna had it all to do, with nothing less than three victories needed to keep his hold on the crown. Prost's one real disappointment was the absence of Mansell, the man many had tipped as a likely Spanish victor. □





1989 FORMULA ONE GRAND PRIX  
ROUND THIRTEEN

## PORTUGAL

Autodromo do Estoril

24th September 1989

Circuit Length: 2.703 miles/4.350 km

Laps: 71

### Drivers' World Championship

Pos	Driver	Total
1	Alain Prost	75*
2	Ayrton Senna	51
3	Nigel Mansell	38
4	Riccardo Patrese	28
5	Thierry Boutsen	24
6	Alessandro Nannini	17
7	Gerhard Berger	15
8	Nelson Piquet	9
9	Michele Alboreto	6
	Eddie Cheever	6
	Stefan Johansson	6
	Derek Warwick	6
13	Jean Alesi	5
	Johnny Herbert	5
15	Alex Caffi	4
	Andrea De Cesaris	4
	Mauricio Gugelmin	4
	Pierluigi Martini	4
	Stefano Modena	4
20	Christian Danner	3
21	René Arnoux	2
	Martin Brundle	2
	Jonathan Palmer	2
24	Olivier Grouillard	1
	Luis-Perez Sala	1
	Gabriele Tarquini	1

\*Only 11 best scores count. Prost drops 2 points scored in Mexico.

### Constructors' World Championship

Pos	Team	Total
1	McLaren	128
2	Ferrari	53
3	Williams	52
4	Benetton	22
5	Tyrrell	13
6	Arrows	12
7	Lotus	9
8	Dallara	8
9	Brabham	6
	Onyx	6
11	Minardi	5
12	Leyton House	4
13	Ligier	3
	Rial	3
15	AGS	1

### Official Starting Grid

		1	Ayrton Senna	1:18.466
			McLaren-Honda	
	1:16.069	28	27 Nigel Mansell	1:16.163
			Ferrari	
Gerhard Berger	1:16.204	2	23 Pierluigi Martini	1:16.938
Ferrari			Minardi-DFR	
Alain Prost	1:17.281	6	21 Alex Caffi	1:17.661
McLaren-Honda			Dallara-DFR	
Riccardo Patrese	1:17.801	5	24 Luis Sala	1:17.844
Williams-Renault			Minardi-DFR	
Thierry Boutsen	1:17.874	7	8 Stefano Modena	1:18.093
Williams-Renault			Brabham-Judd	
Martin Brundle	1:18.105	36	19 Alessandro Nannini	1:18.115
Brabham-Judd			Benetton-Ford	
Stefan Johansson	1:18.124	15	31 Roberto Moreno	1:18.196
Onyx-DFR			Coloni-DFR	
Mauricio Gugelmin	1:18.328	20	30 Philippe Alliot	1:18.386
Leyton House-Judd			Lola-Lamborghini	
Emanuele Pirro	1:18.404	3	22 Andrea De Cesaris	1:18.442
Benetton-Ford			Dallara-DFR	
Jonathan Palmer	1:18.482	11	29 Michele Alboreto	1:18.563
Tyrrell-DFR			Lola-Lamborghini	
Nelson Piquet	1:18.711	9	25 René Arnoux	1:18.767
Lotus-Judd			Ligier-DFR	
Derek Warwick	1:18.785	16	12 Satoru Nakajima	1:19.165
Arrows-DFR			Lotus-Judd	
Ivan Capelli	1:19.247	10		
Leyton House-Judd				
Eddie Cheever				
Arrows-DFR				

### Race Classification

Pos	Driver	No	Nat	Car	Laps	Time/Retirement
1	G. Berger	28	Aut	Ferrari	71	1:36:48.546
2	A. Prost	2	Fra	McLaren-Honda	71	1:37:21.183
3	S. Johansson	36	Swe	Onyx-DFR	71	1:37:43.871
4	A. Nannini	19	Ita	Benetton-Ford	71	1:38:10.915
5	P. Martini	23	Ita	Minardi-DFR	70	
6	J. Palmer	3	GB	Tyrrell-DFR	70	
7	S. Nakajima	12	Jap	Lotus-Judd	70	
8	M. Brundle	7	GB	Brabham-Judd	70	
9	P. Alliot	30	Fra	Lola-Lamborghini	70	
10	M. Gugelmin	15	Bra	Leyton House-Judd	69	
11	M. Alboreto	29	Ita	Lola-Lamborghini	69	
12	L. Sala	24	Spa	Minardi-DFR	69	
13	R. Arnoux	25	Fra	Ligier-DFR	69	
14	S. Modena	8	Ita	Brabham-Judd	69	
R	R. Patrese	6	Ita	Williams-Renault	60	Overheating
R	T. Boutsen	5	Bel	Williams-Renault	60	Overheating
R	A. Senna	1	Bra	McLaren-Honda	48	Accident with Mansell
R	D. Warwick	9	GB	Arrows-DFR	37	Accident with Sala
R	N. Piquet	11	Bra	Lotus-Judd	33	Accident with Caffi
R	A. Caffi	21	Ita	Dallara-DFR	33	Accident with Piquet
R	E. Pirro	20	Ita	Benetton-Ford	29	Seized front damper
R	I. Capelli	16	Ita	Leyton House-Judd	25	Engine
R	E. Cheever	10	USA	Arrows-DFR	24	Engine
R	A. De Cesaris	22	Ita	Dallara-DFR	17	Electronics
R	R. Moreno	31	Bra	Coloni-DFR	11	Misfire/electrics
DQ	N. Mansell	27	GB	Ferrari	48*	Black flagged

Fastest Lap: Gerhard Berger 1:18.986, 123.198 mph/198.263 km/h

### Non Qualifiers

No	Name	Car
4	J. Herbert	Tyrrell-DFR
26	O. Grouillard	Ligier-DFR
39	P. H. Raphanel	Rial-DFR
38	C. Danner	Rial-DFR

### Non-Pre Qualifiers

No	Name	Car
37	J. Lehto	Onyx-DFR
18	P. Ghinzani	Osella-DFR
33	O. Larrauri	EuroBrun-Judd
40	G. Tarquini	AGS-DFR
35	A. Suzuki	Zakspeed-Yamaha
34	B. Schneider	Zakspeed-Yamaha
32	E. Bertaggia	Coloni-DFR
*17	N. Larini (Osella-DFR)	Excluded
41	Y. Dalmas (AGS-DFR)	Excluded

=Sports Seen=



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(John Townsend)

Not for the first time in 1989, a Grand Prix was notable more for the incidents that occurred off the track than on it.

The circus rolled into Jerez the week after Estoril, on a wave of fresh acrimony following the now famous Mansell reversing act in the pits and his subsequent ignorance of the black flag and coming together with Ayrton Senna.

The Thursday prior to the race, Nigel had convened a press conference in the paddock, to tell the world that quotes elsewhere in the Italian national daily media had been fabrications, and to explain his conduct.

At the time he hoped his appeal would be heard the following day, in time for him to commence qualifying on the Saturday.

It was a fairly emotional meeting, as one would expect from a fairly emotional man. He raised a number of criticisms against Senna and the McLaren management, and he defended Ferrari to the hilt. Again and again he denied having seen the black flag at all, to the point where some began to wonder if a misplaced sense of loyalty wasn't leading him to defend team manager Cesare Fiorio.

Part of the emotion was evident in his

none too veiled threat to quit F1 if his appeal wasn't upheld, but that backfired when FISA decided it didn't have the time to convene a special court of appeal before the race. It had, miraculously, had time to hold an emergency meeting the previous Tuesday, in which the Portuguese stewards' request for a ban was upheld, but now a similar thing couldn't be arranged until after the race, the following Thursday. It was convenient. Too convenient. Mansell was stymied. One way or another, he wasn't going to run in Spain, on a track where he had very much fancied his chances given the excellent handling of his Ferrari F1/89.

At this juncture a little comment on the race ought to be germane, but wait. The background aggravation wasn't over yet, oh no. Not by a long way. And, truth to tell, there wasn't much racing anyway.

During a lull in prequalifying on Friday morning, created when Yannick Dalmas had deposited his AGS in the tyre wall after the very fast right-hander behind the pits, Ron Dennis called the British press in for a little chat. He didn't want to get sucked into the controversy, he was at pains to stress, but that didn't stop him. He answered Mansell's points of criticism.

He obliquely took another swipe at him by telling those present who didn't already know about it that the McLaren Christmas party the previous December had featured a cabaret with Murray Walker dressed as a ringmaster and a monkey playing the role of Mansell. It was a neat little twist of the knife. He called the Briton a liar, dismissed his claims not to have seen the flags as 'horseshit'. It was Dennis in full spate.

It was quite apposite, if ironic, that the chat and cosy little film show should take place in the opulent McLaren motorhome on the outside of that dangerous bend, not only because it has now been christened the Enzo Ferrari curve, but also because not long afterwards the motorhome's pristine sides were being peppered with small-bore gravel as Gregor Foitek's Rial lost part of its rear wing and plunged hard into the tyre wall. It set in motion a fresh chain of controversial events that would embarrass Dennis.

The black flags eventually came out to signal the severity of the incident (which only shook up the hungry Swiss), but they were of minor interest to Mr Senna. He was out on a quick lap, so he chose to ignore them. The rules say a driver must proceed with

caution and be prepared to stop, but Ayrton elected to do neither. Instead he kept his foot in it and drove past them.

Eight of them.

He slowed when he chose to, at the start/finish line once the lap time was safely in the bag. It coincided with the red flag. It was a cavalier performance that struck in many throats, especially after Senna had slagged Mansell's tactics in Portugal as 'suicidal'. Even Dennis, who had earlier admitted his error in not informing Senna of the black flag sooner than he did in Estoril, said he felt the subsequent \$20,000 fine was justified. What he said to his driver in private would have been worth hearing.

But was \$20,000 punishment enough? Many observers took the view that Senna had made a final gesture of defiance at Mansell.

His lap-times to that point were trashed, but with five minutes left he went faster, and the following day he ensured that he started from his 40th pole. In the race, he ran away and hid. It was just as well. He needed to win all three final rounds, and nine points from Jerez were essential.

He drove a beautiful race, as he so often does, judging his opposition to a tee. Berger, flying a lone and uncharacteristically genteel flag for Ferrari at the start, let Senna outdrag him even though in Rio, Hockenheim and Estoril the boot had firmly been on the other foot. He attacked thereafter, but the McLaren was always a match for the Ferrari and the contest never looked too serious beyond the 15 lap mark. Gerhard knew it, and drove accordingly. When the V12 began pumping out an unsightly cloud of oil mist, mainly in the sixth gear left-



Pirelli rubber made Martini a qualifying star — but they couldn't live with the race leaders (Sporting Pictures)

handers, from lap 48 onwards, his role became one of high-speed nursemaid rather than potential championship hope stealer.

Thoroughly detuned after further bitter arguments with Dennis, Alain Prost took all he could reasonably have hoped for from Jerez: third place. This time last year he won the one race McLaren's Steve Nichols had believed beyond the team's reach, but McLaren 1989 is no longer a Prost stronghold. He fought not only his emotions, but also his gears throughout, much as he had done through qualifying, reckoned he missed at least one shift per lap, and called himself a taxi driver as he savoured an extra point in his campaign. Dropping his two points from Mexico had left him with a nett score of 75 from the 11 races a driver may

count prior to Jerez. Now, from those four points he subtracted his next lowest score, three in Hungary. That one point that was left kept the gap to Senna to a vital 16, which meant Ayrton had to win both final races to win the title. If he succumbed in either, no matter to whom, Prost would take his third championship.

Mansell, his 1990 team-mate and an ally with no love lost with the Brazilian, was out of the picture in Spain, punished for nearly upsetting the championship's chances of lasting right down to the final race, and how the Spanish GP missed him.

In his place, Martin Brundle and Jean Alesi did their utmost to enliven proceedings with their stout contest of eighth place initially, in the wake of the three leaders, Riccardo Patrese and



Thumbs up: first point for Alliot this year, first-ever for the Lamborghini engine (John Townsend)

Ferrari fills a McLaren sandwich — but Berger and Prost picked up crumbs from Senna's table (Allsport/Pascal Rondeau)



the two other surprises, Pierluigi Martini and Philippe Alliot.

It was quite a rough-house betwixt Brabham and Tyrrell until Alesi found the way by, gave a little flick that forced Brundle to coat his right-hand tyres with grip-reducing dust, and then blew into the distance in pursuit of Emanuele Pirro's Benetton, which had jumped the Brabham on lap nine. Indeed the scrap had already forced an angry Sandro Nannini into a spin with the other Benetton, and he then threw his B189 into the gravel in turn one in his haste to recover. He would not be alone.

Satoru Nakajima didn't get further than the second corner of the first lap before spinning and inflicting damage on a passing Capelli. Luis Sala would take out Mauricio Gugelmin in the





No controversy over pit stops this time: Berger's Ferrari was stationary for just 6.2 seconds

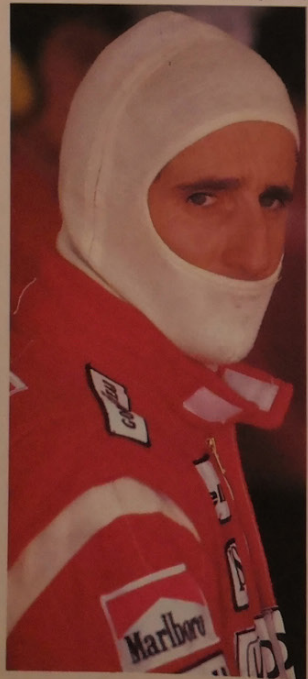
(John Townsend)

other Leyton House March as they battled for ninth place on lap 48. Nicola Larini crashed heavily but without injury when his well qualified Osella's suspension broke after seven laps. And the two Arrows drivers managed to make contact in confusion over a De Cesaris tyre stop!

The saddest spins were Martini's and Pirro's, though. The Minardi driver

Prost kept quiet all weekend — and one point meant Senna needed to win the last two races

(Sporting Pictures)



had electrified in practice, carrying on where he left off in Estoril and setting fastest time on Friday morning. In the afternoon and on Saturday morning he remained up there, second in each session, and only on Saturday afternoon did a front row start finally begin to look unlikely. Shortly after his race stop for some of Pirelli's effective rubber he climbed a kerb and spun across Cheever's nose, and when he was unable to select reverse he had to call it a day.

The young Roman, meanwhile, had the bit went between his teeth in the Benetton and fourth place in his pocket when leg cramp finally defeated him on lap 62. He wanted to brake, but his limbs simply couldn't respond. Nelson Piquet's initial chances had been dashed in a grassy moment courtesy of Nannini, and Brundle, too, went autocrossing as he hounded Alesi for sixth. In his case a broken exhaust pipe had filled the engine bay with hot fumes which eventually overheated the damper and upset the handling without prior warning.

In Estoril Williams had debuted its long awaited new FW13s, Patrese and Boutsen being unlucky to lose points in the closing stages when overheating finally cooked their Renault V10s. There, as they had in testing at Silverstone the previous week, Patrick Head's new creations betrayed their youth, weaving and darting like lively young mustangs yet to be tamed. Patrese decided enough was enough after Friday and hopped back into his trusty FW12C. Boutsen, never at his best when the car is less than perfect, rather surprisingly opted to stick with the new one.

Patrese's was the more sensible short-

term choice, but in the closing stages he was deprived of fourth place by the aggressive Alesi as he headed pitward for a third set of Goodyears after his second had produced sufficient understeer to ruin any hope of keeping the troubled Prost in sight as the Frenchman continued to wrestle with a baulky gearshift.

The final laps posed a dilemma to Jean, however. Should he push hard again, eased off as the Brazilian coped with leg cramp, as well as fading brakes and transmission? If so he faced the need to cover another lap if he unclipped himself, which he didn't want. Yet trapped as he was behind the MP4/5, he presented an attractive target to Patrese as he hungrily made up ground on a set of fresh Goodyears of soft C compound. It was enough to bring Ken Tyrrell to frantic life on the radio, and was one of the few genuinely interesting points of an exceptionally dull affair, and Alesi duly clung on for fourth by a whisker as Patrese lunged for the line.

Alliot's sixth was significant encouragement for Lola Larrousse and Chrysler Lamborghini, even if Philippe is almost certain to be replaced next year by Eric Bernard and Aguri Suzuki, and the engine's second consecutive finish did not escape the troubled Warwick as he unsuccessfully battled the delayed Piquet to the line for eighth place. He, of course, will have one in the new Lotus 102.

Had he kept going, Keke Rosberg's young protegee JJ Lehto would have finished ahead of both, possibly even in the points in the sole Moneytron Onyx to make it through prequalifying. In his proper F1 debut he looked entirely at home as he played an initial waiting game as part of a crocodile that comprised De Cesaris, the two Arrows, Sala and Boutsen, but gearbox failure sidelined him before he had a chance to show his real mettle.

Those were the worthy points, such as they were. But how would Mansell have gone? Could he have pressured Senna? They were questions which belonged only in the history books, but almost certainly, in his current wound-up state, he would have been very, very quick. Instead, his suspension brought an unpalatable taste to many mouths.

As it was, the Spanish GP was a cakewalk for Senna at a time when he desperately needed to inject some stability into his championship campaign. Suddenly, the task of winning the final three races didn't seem so impossible after all. □

## 1989 FORMULA ONE GRAND PRIX ROUND FOURTEEN

### SPAIN

Circuito Permanente de Jerez

1st October 1989

Circuit Length: 2.621 miles/4.217 km

Laps: 73

### Drivers' World Championship

Pos.	Driver	Total
1	Alain Prost	76*
2	Ayrton Senna	60
3	Nigel Mansell	38
4	Riccardo Patrese	30
5	Thierry Boutsen	24
6	Gerhard Berger	21
7	Alessandro Nannini	17
8	Nelson Piquet	9
9	Jean Alesi	8
10	Michele Alboreto	6
	Eddie Cheever	6
	Stefan Johansson	6
	Derek Warwick	6
14	Johnny Herbert	5
15	Alex Caffi	4
	Andrea De Cesaris	4
	Mauricio Gugelmin	4
	Pierluigi Martini	4
	Stefano Modena	4
20	Christian Danner	3
21	Rene Arnoux	2
	Martin Brundle	2
	Jonathan Palmer	2
24	Philippe Alliot	1
	Olivier Grouillard	1
	Luis Perez Sala	1
	Gabriele Tarquini	1

\*Only 11 best scores count.

### Constructors' World Championship

Pos.	Team	Total
1	McLaren	141
2	Ferrari	89
3	Williams	84
4	Benetton	22
5	Tyrrell	16
6	Arrows	12
7	Lotus	9
8	Dallara	8
9	Brabham	6
	Onyx	6
11	Minardi	5
12	Leyton House	4
13	Ligier	3
	Rial	3
15	AGS	1
	Lola	1

### Official Starting Grid

Cerhard Berger	1.20.565	28	1	Ayrton Senna	1.20.291
Ferrari				McLaren-Honda	
Pierluigi Martini	1.21.479	23	2	Alain Prost	1.21.368
Minardi-DFR				McLaren-Honda	
Riccardo Patrese	1.21.777	6	30	Philippe Alliot	1.21.708
Williams-Renault				Lola-Lamborghini	
Martin Brundle	1.22.133	7	11	Nelson Piquet	1.21.922
Brabham-Judd				Lotus-Judd	
Emanuele Pirro	1.22.567	20	4	Jean Alesi	1.22.363
Benetton-Ford				Tyrrell-DFR	
Stefano Modena	1.22.826	8	17	Nicola Larini	1.22.620
Brabham-Judd				Osella-DFR	
Alessandro Nannini	1.23.106	19	3	Jonathan Palmer	1.23.052
Benetton-Ford				Tyrrell-DFR	
Derek Warwick	1.23.222	9	22	Andrea De Cesaris	1.23.186
Arrows-DFR				Dallara-DFR	
Satoru Nakajima	1.23.309	12	37	J. J. Lehto	1.23.243
Lotus-Judd				Onyx-DFR	
Luis Perez Sala	1.23.443	24	16	Ivan Capelli	1.23.401
Minardi-DFR				Leyton House-Judd	
Eddie Cheever	1.23.729	10	5	Thierry Boutsen	1.23.657
Arrows-DFR				Williams-Renault	
Olivier Grouillard	1.23.931	26	21	Alex Caffi	1.23.763
Ligier-DFR				Dallara DFR	
Mauricio Gugelmin	1.24.707	15	18	Piercarlo Ghinzani	1.24.003
Leyton House-Judd				Osella-DFR	

### Race Classification

Pos.	Driver	No.	Nat.	Car	Laps	Time/Retirement
1	A. Senna	1	Bra	McLaren-Honda	73	1:47:48.264
2	G. Berger	28	Aut	Ferrari	73	1:48:15.315
3	A. Prost	2	Fra	McLaren-Honda	73	1:48:42.052
4	J. Alesi	4	Fra	Tyrrell-DFR	72	
5	R. Patrese	6	Ita	Williams-Renault	72	
6	P. Alliot	30	Fra	Lola-Lamborghini	72	
7	A. De Cesaris	22	Ita	Dallara-DFR	72	
8	N. Piquet	11	Bra	Lotus-Judd	71	
9	D. Warwick	9	GB*	Arrows-DFR	71	
10	J. Palmer	3	GB	Tyrrell-DFR	71	
R	E. Cheever	10	USA	Arrows-DFR	61	Engine
R	E. Pirro	20	Ita	Benetton-Ford	59	Spun off
R	A. Caffi	21	Ita	Dallara-DFR	55	Engine
R	M. Brundle	7	GB	Brabham-Judd	51	Spun-shock abs o/h
R	M. Gugelmin	15	Bra	Leyton House-Judd	47	Accident with Sala
R	L. Sala	24	Spa	Minardi-DFR	47	Accident with Gugelmin
R	T. Boutsen	5	Bel	Williams-Renault	40	Engine
R	O. Grouillard	26	Fra	Ligier-DFR	34	Engine
R	P. Martini	23	Ita	Minardi-DFR	27	Spun off
R	I. Capelli	16	Ita	Leyton House-Judd	23	Transmission
R	J. J. Lehto	37	Fin	Onyx-DFR	20	Gearbox
R	P. Ghinzani	18	Ita	Osella-DFR	17	Gearbox
R	A. Nannini	19	Ita	Benetton-Ford	14	Spun off
R	S. Modena	8	Ita	Brabham-Judd	11	Electrics
R	N. Larini	17	Ita	Osella-DFR	6	Accident
R	S. Nakajima	12	Jap	Lotus-Judd	1	Accident with Capelli

Fastest Lap: A. Senna 1.25.779, 109.999 mph/177.022 km/h

### Non Qualifiers

No.	Name	Car
25	R. Arnoux	Ligier-DFR
28	P. H. Raphanel	Rial-DFR
29	G. Foitek	Rial-DFR

### Non-Pre Qualifiers

No.	Name	Car
40	G. Tarquini	AGS-DFR
36	S. Johansson	Onyx-DFR
31	R. Moreno	Coloni-DFR
29	M. Alboreto	Lola-Lamborghini
34	B. Schneider	Zakspeed-Yamaha
41	Y. Dalmas	AGS-DFR
35	A. Suzuki	Zakspeed-Yamaha
33	O. Larrauri	EuroBrun-Judd
32	E. Bertaggia	Coloni-DFR



# PIQUET'S PARTING SHOTS

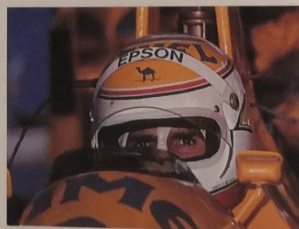
## THE LEAVING OF LOTUS

"I won the Championship in '87, and came to Lotus in '88 with nearly the same equipment, same engine — to try to win the Championship easily. When I was with Williams, I had my first number one contract, and they did not complete the contract in the right way; we had a big fight with Nigel, we lost the Championship in '86, and in '87 it was a struggle to win it. Anyway I didn't think that was fair, because the contract was for me to be number one driver. If they'd run the contract like it was, I should have won in '86 and '87 easy, but we lost it in '86.

"Then Lotus gave me a good offer; it was the same engine, and I thought it should be good to come here. The problem was, that after three or four months here I found the car was not as good as it should be. I think Ducarouge made some basic things wrong in the car: it was twisting too much, it was not sensitive enough — if you changed things on it you didn't feel much difference in the car. We lost a complete year like that, lost four or five races with the clutch, that's how it was until the end of the year.

"For all these reasons together, we lost the Honda engine for 1989; losing the engine, we lost all our chances... But I had a two-year contract, I could not leave the team because of legal things; and I lost a lot of credibility in my driving, people were saying I didn't want to drive any more. It doesn't affect me very

much, but it *does* affect my chances of getting a good car for next year.



"Soon I got in touch with the big teams, and told Lotus I was doing that. But I tried to bring Frank Dernie here, and now the car we have today is very good. We need to learn a little bit more about the car, fix some things, do some little easy things to make the car just quicker, but basically the car is very good, very sensitive. But unless you have power from your engine you have no chance to do anything.

"In my opinion, in what I know from Lamborghini, they don't have resources to develop their V12 engine. They have a very experienced man there in Mauro Forghieri from Ferrari, but apart from him they don't have anything else. They're going to charge for the engines, they're a company that tries to make money, they're right at the beginning, they're not doing the development to make the thing quicker — I think it will not be a lot better than the Judd engine.

"Now I'm already trying just to finish the year, because already I have my

eyes on next year, trying to see if I have more chance of the Championship. I know what I am able to do, that ability is something that as a driver you don't lose. Of course you get older, but you just do more exercise and try to keep yourself in shape.

"Formula One is much more complex now than when I came in; there's a lot more interest, too, with the money, more people making money, more companies investing a lot of money. The value of the driver is always getting higher and higher all the time, because people invest so much money: they don't want to be screwed by someone that's not experienced enough or quick enough. But the basic facts about being a Grand Prix driver don't change. You just want to get in a car and go quicker still...

"All my life is organised in motor racing, everything I do is around motor racing. Of course this year if I hadn't had a chance to get a competitive car for '90 I would have stopped, at least for one year, maybe tried in another category to be competitive, because the main thing is just to be competitive. But I've got the contract with Benetton and I think we can have a good year. The team has been unsettled, too, but I think that's all behind them and I'm confident we can build on the new set-up there."

Above: Nelson in typical action — before a spin prompted his retirement from the Italian GP (Alonso: Pascal Rossier)

The interesting challenge at Lotus is to build the team up to race-winning level and I think a lot of people underestimate how long it takes to do the engineering function. You can see now the fruits of John Barnard's efforts which have probably been three years in turning Ferrari around. Unlike with a driver who, if he makes a cock-up, 1min 20secs, later gets a chance to put it right, if you have a situation within a racing team organisation or with a design of a car where a mistake is made, you take a long time to rectify it. I think Lotus were in a situation where it needed changes.

Looking at our new Lotus driving partnership for next year, it would be unfair of me to say anything negative. As a matter of principle I think any Grand Prix team should have the best drivers that it can afford. Now if that means spending \$10m, \$12m or buying Senna's or whoever you might consider that to be, if you don't have that \$12m then you can't do it. It certainly is the case that within a team that does not have certain resources that are necessary to build competitive Grand Prix cars, to actually spend \$10m on drivers when you need a wind tunnel would be criminal lunacy in my opinion.

I think, too the Lamborghini V12 is very much the best engine available to us — and it does not imply a fundamental revision of the car. It's a different shape, that's all. It's a small rearrangement of the central section of the car. You will get more horsepower the more cylinders you have. If they would permit 16 you would probably be able to make an argument that 16 would be better still. Against that you have to balance the complexity and potential unreliability that such an engine may bring with it.

While reservations have been expressed about that engine's reliability, you have to recognise that the engine has not been in existence for very long and therefore the development time for it has been limited in comparison with the development time that has been spent on most of the engines that are front-running. But there is a hell of a lot more time before we race our Lamborghini engine for the first time.

We have a mock-up in the truck. Until we look at the mock-up and the various drawings we will not know how long it will take to install it in an existing car, or alternatively whether we will have to wait until a new car is finished before we can run it.

# FRANK DERNIE:



Race engineer Steve Hallam supervises work on the Frank Dernie-designed Lotus 101

## CHANGE AND CHALLENGE

Being at Lotus, after my time with Williams, is a physically different thing. Lotus came from different beginnings, has grown in different ways as a result of the personalities of the team principals: it is very, very different. Tradition and history make themselves felt there, to a limited extent. There are a certain amount of positives and a certain amount of negatives looking at the past. Some

people will have the attitude that this is the Lotus way of doing things, which is positive, and others will actually want to do things the way they were done in the past, even though now it would not be a very bright way to do it, i.e. you do have to take the strengths and capitalise on them and actually eliminate the weaknesses by moving with the times.





Emphasising teamwork: Noel Stanbury welcomes greater democracy in the running of Lotus  
(Sporting Pictures)

# NOEL STANBURY: "PUTTING THE TEAM BACK IN TEAM LOTUS"

**Q: After what has been a very trying year for Lotus, do you now see light at the end of the tunnel, or even the exit from that tunnel?**  
I should think that 1989 as you know has probably been one of the most difficult years in Lotus's history. We have failed to satisfy ourselves in terms of track performance and we're very disappointed. And obviously the Spa situation was a bit of a problem for everybody, and came particularly at the time when morale was on the mend. I think perhaps we had a slight over-reaction to Spa because — I make no bones about it — if all the balls land at the wrong time you are going to be in trouble. That is exactly what happened at Spa. It could happen to anybody. Over the last 2½ years we have worked very, very hard establishing good professional relationships with

RJ Reynolds who are still the newest and biggest sponsors on the Formula One scene. We have been working very hard to maintain an association where we can develop for the future. It has been particularly difficult of course with the management situation which has come to a head this year. However, that has given us the opportunity for a clean slate. We are actually delighted that we have been able to create a situation where we can maintain our relationship with RJ Reynolds as the prime sponsor of the team. It is as far as we are concerned a long-term plan and we are looking to build on that for the future.

I think there are a lot of people in Formula One who have failed to grow to what Formula One has become and really failed to relate laterally to all the aspects of this business. It improves, it increases and it changes weekend by weekend and unfortunately unless the people who are involved in Formula One

begin to relate to an increasing professionalism and a much wider appreciation of marketing and promotion you can not relate to the professionalism and marketing attitudes of the big companies who are involved in it.

I see what we have now as the opportunity to restructure a lot of our thinking, implement a lot of new ideas and motivations for the team with RJ Reynolds as our principal partner. I am not somebody who really likes to relate to the word 'sponsor'. Historically, a sponsor is a sponsor. It still has that smack of altruism: at Lotus that is not the case at all. Our principal sponsor has committed to us a very large sum of money indeed and we have to relate to the fact that we are having that investment in order to do a job for them. It is television, it is a promotional opportunity. We have to provide these things for them. We have a change of attitude in the team that will enable us to do that.

Tony Rudd has come in. He has a wealth of professional experience, a

man who is a considerable inspiration to us. He is leading from the front, he is leading by example rather than leading by dictate. He has given us areas of responsibility with defined, broad guidelines, which we are all involved in conceiving, but then it's down to us chaps to get on and do the job. The management is responding to that as a management style far better than any other that has been applied to Team Lotus in the past — a more American, in some respects a more Japanese style.

**Q: It would appear, then, that you personally are happy to stay at Lotus?**

Yes. I make no bones about it, I was very unhappy earlier this year. That really came to a head in July and I no longer feel suffocated. I feel I can get on and do the job far far better, and my ideas and inputs are much more appreciated and related to. I shall continue my position as the person responsible for its commercial and marketing activity, and I would love to see the team re-establish itself as a market leader, rather than a market follower. I am enjoying the support of some very good people to do that. Now we haven't finished the reorganisation and the restructurings but I feel, we all feel, the necessary and various departments within the company could achieve that over the next few months.

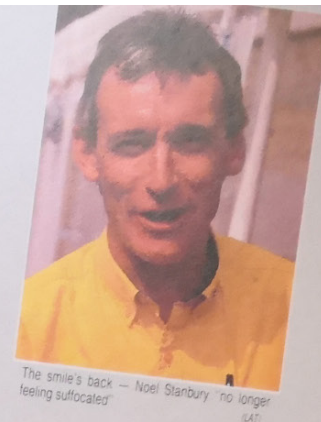
**Q: Are you not afraid the bubble will burst, or is the growth of Formula One an ongoing trend?**

It is going to be very interesting to see what our media statistics are this year, particularly after the explosion that was recorded for 1988 on the T.V. side. I do not think there is a bubble that is going to burst, otherwise you would not be getting the sort of commitment now that RJ Reynolds have made to us. I do think that perhaps in the next three or four years we are going to see a shift of emphasis in terms of investment and sponsorship partners in motor sport and I think that there is still a great deal to be done within the basic structure of Formula One to make it more understandable, not more appealing, more understandable to the concerns within global marketing. You can use it as a very effective promotional vehicle.

**Q: Was it a deliberate policy of yours for next year to recruit an all-British driver line-up, restore the British tradition?**

That has been the interpretation. Peter Warr was a pretty good talent

spotter and nobody at all in the team has been unhappy about the relationship that he has had with Martin Donnelly this year. Martin has had 10 days of good solid testing. Every time he has got in the car he has impressed us. He has not done anything silly. I think he's only spun the car once. He's very impressive. We desperately want to see him in the team next year. Having said that it is very important for us to maintain the development and technical expertise that we have got next year with the new engine, and maintain an experienced person in the car. Now Derek Warwick knows all the puddles and bumps on the 16 locations we go to each year; he has a reputation for technical feedback, and is very aware of the marketing side of things. We have been through an enormous upheaval, as much psychologically as anything, in the last two months. We've all got our balls in a row on



The smile's back — Noel Stanbury 'no longer feeling suffocated'

the desk: without dismissing the past, we have to get on now and get a job done. The 1990 season will be interesting and inspiring. We're looking to put Team Lotus not just back at the forefront, but even farther ahead... ■

## ROB WALKER REMEMBERS

**T**he first victory for a Lotus Grand Prix car in the World Championship was not achieved by Team Lotus themselves, but in a Rob Walker-entered Lotus 18. Rob Walker, still an active Formula One journalist, remembers Colin Chapman...  
"The first thing I had to do with Lotus was when Colin Chapman produced the Lotus 18 in 1960. Innes Ireland did very well in it, and beat Stirling Moss, who was then driving for me - and anybody who could beat Stirling, well there had to be something in it! I can't remember how long it took Colin to make our Lotus 18, but it was ready 10 days before Monaco. We went and tested it at Goodwood, and Stirling was absolutely delighted with it - I have a photo of him doing a pas de deux when he got out of the car! That year it rained at Monaco in the middle of the race; Stirling had never driven that car in the wet, and although he was the rain master of all time, he slowed down and let Jack Brabham through. Next thing Jack was wrapped around a bus stop or something, Stirling got the lead back, it dried off and he went away for the first win that Lotus ever had."

"I had asked Colin for two of the latest Lotus 24's, they were to be the same as the very latest works cars, and this was a promise. I took them to Zandvoort for the first race

of 1962 - and Colin produced the Lotus 25! John Cooper went up to him and said, 'Colin, I thought you were giving Rob the latest works cars?' So Colin said, 'Oh well, they are more or less, there's just a little bit of difference in the body work.' And John put his head into the cockpit and said, 'Oh yes, I see, you've just left the chassis out!' And of course it was the first monocoque chassis in Formula One..."

"Colin was the most devious person I've ever met in my life. He always treated me well, very well, but he used to make promises that he couldn't keep too - and then the deviousness came in! All sorts of incredible excuses would come out; but when the cars were ready he would sell them to me very cheaply..."

"When the 72 came out, Graham Hill was driving for me. We were in the next pit to Lotus at the Spanish Grand Prix in Jarama. At the end of that long straight the drive shaft broke and Rindt went off. He came back - and being in the next pit I could hear everything - and said, 'I'll never get in that effing car again in my bloody life, it's an absolute danger to the world!' So I said to Graham, 'What happens next?' 'Oh', he said, 'Colin will take him into a corner, talk to him for ten minutes, then he'll get into the car and drive it off as if nothing had happened...'"



# LAMBORGHINI

## BULLISH ABOUT FORMULA ONE



Daniele Audetto (centre) with (to his right) the man behind the Lamborghini engine, Mauro Forghieri.

**In 1990 Lamborghini will supply two Grand Prix teams: Larrousse and Lotus. Happy alliterations all round, but after just one year in motor sport's most competitive arena, how does Lamborghini's Managing Director Daniele Audetto view the recent past — and the season ahead?**

In one sense our first year was a little disappointing, because we thought it was not that hard — and it's super-hard! We had a good start, because we finished the first race in Brazil, but of course we were not using maximum power: we had the old gearbox, the old, very heavy car, our task was just to finish, and that was almost easy.

But then we had a big change in our structure, because we decided after Brazil that we wanted to make a parallel test, an alternative programme with Bosch. We felt with Magneti Marelli that we were not the number one team, not even number two, because of course Magneti Marelli was supplying first Ferrari, as part of the group, and then Renault. So we were last, we had some delays, we were unhappy... We told Magneti Marelli we were going to do an alternative programme — not racing, just testing — but they were very strict and said, either you stay with us exclusively or you go with Bosch. So at that point we had to make a very delicate decision, and we decided to go with Bosch, even though with Magneti Marelli it was starting to work quite well. We started from scratch, so we lost three or four races just to set up the

management system, electronics, fuel injection — and now we are sure it was a good decision. But at first we did lose some time.

The second problem we had is that at the beginning of the year we had a test programme with the Larrousse team. First the team ran into difficulties because of the Didier Calmels affair, and Gerard Larrousse had to take over responsibility for the financial side too; then Gerard Ducarouge made changes to the Lola chassis — it was only just ready in time for Imola, after which you have a race every two weeks, so it was a rush to have the second car, then the third. So we had actually to go to the circuit for official practice without any testing, and the problems that arise come because you did not do enough testing. You look at Ferrari with Fiorano, Renault at Ricard, all the top teams — without talking about McLaren — and then compare...

Man with a mission: Mauro Forghieri, Sporting Pictures



So I am disappointed, because we felt we deserved better results from our racing. But even with all the problems I have explained, we must still be happy, because in this first season so far we qualified in every race. Look at the problems that have hit Yamaha, an even bigger company than we are, remember the first year of Honda with Spirit... But don't forget we only started a year ago. The first time the engine ran in the car was December 13th 1988, the first time it ran on the dyno was exactly a year ago now (mid-September 1988). But of course we are a great name, and also behind Lamborghini we have Chrysler, and Mr. Iacocca is not the guy to go into competition just for the sake of it, he wants to make the team and Lamborghini successful.

So what is our plan? You can have the greatest idea in the world, but if you don't have the manpower and the money you cannot concretise it. We thought we were ready to go with a second team, a better team, and to make a proper test of our programme. Because first of all the car performed as well as Ferrari two months ago at Le Castellet, the only circuit where we did a test: Allison was in front of Patrese, and for 21 laps Patrese didn't overtake him, he overtook him only because he missed a gear — the gearbox was not perfect at the time. Then Bernard, in his first Formula One race, was right behind Berger all the time. So we were as good as Ferrari and Renault just over two months ago.

But then because of the reliability

problem that we discovered only during official practice and during the race, we had to concentrate more on that side than on development, so we lost just a little bit of competitiveness. Now we have to catch up the time, run a very full test programme during the winter — and that's why we chose Lotus.

Lotus has three things for us, really. First, historical: Lotus is a great name, second only to Ferrari. So to place Lamborghini and Lotus together is professionally and promotionally fantastic. But promotion is not all, otherwise it can turn into a boomerang: good publicity at the start, then bad... Second point: they have a big budget, with a big sponsor, and the approach of Camel in motor sport is one we like very much. They are really a sponsor that is involved with the team, with the programme, not just a sponsor that puts its name on the car — it is more active. They have the financial resources to do what we really want — test programme, development. Third, organisation: technically, we think they are very good. Frank Dernie is very good, Mauro Forghieri at Lamborghini likes Frank very much. On the driver side, Derek Warwick is very experienced, Martin Donnelly very promising. The whole team is making a fresh start. They may not have a top-name team manager, but they have good people working very hard. And in the FOCA relationships which are also very important, I think Tony Rudd will bring to bear his power, his own merits, his experience. So with all these three things we think Lotus will help Lamborghini a lot to grow up.

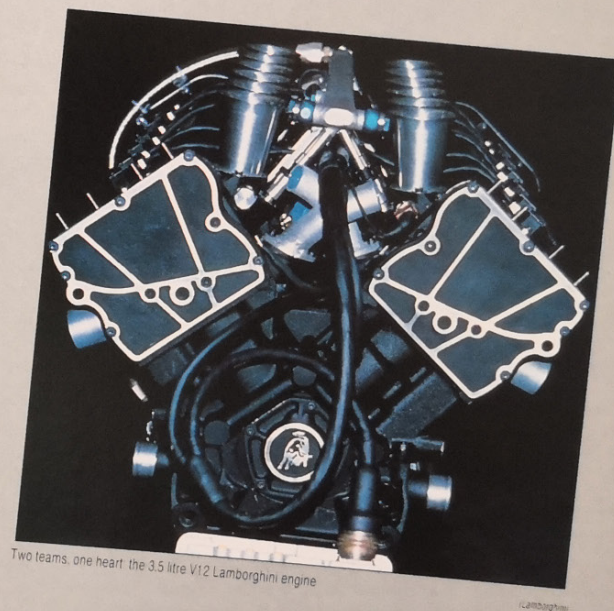
It was not a case of Camel persuading Lamborghini to go to Lotus, or anything like that. I must admit we had some talks with Camel, because they were also a sponsor of Larrousse; we met with Duncan Lee (RJR's director of Sponsorship) last year, but that was mainly about Larrousse. The Lotus team came when Tony Rudd and myself had a discussion at the German Grand Prix. I almost closed a contract with Brabham, in fact. It was close: we shook hands, Joachim Luthi sent me a fax, I was ready to go to Detroit for authorisation to go with Brabham. We started in Silverstone, then Hockenheim, and suddenly I heard at Hockenheim from some Swiss journalist friends that there were problems. So just in case, before going to Detroit, I really wanted to take an alternative. That was when Lotus were also making big changes, so I went to say hello to Tony Rudd, a friend from the old

times, and ask what his plans were. He was interested in our engine, not really thinking it was possible because he knew we also were very close to Dallara. When I came back from Hockenheim we read that Luthi had been arrested. So straight away we organised a meeting in Detroit, and instead of Brabham we invited Tony Rudd there on August 16th. We discussed the details of the contract, then I went to London to meet Duncan Lee, and together we came to an agreement which I must say is not Lamborghini-Camel, not Lamborghini-Lotus, but the three of us in a triangle. I think too that Lotus are very glad to have the support of Camel in making this programme with us. Our contact is directly with Lotus; maybe in the future we shall also have a contract with Camel, but that is something separate to use and exploit the name of Lamborghini, nothing to do with the technical side.

Let me make it clear that Lotus are not buying engines from us. We have

a system that is very straightforward and clear. It is not possible for us to sell engines: we must remain owners of our engines, so we are leasing them the engines, with a forfeit, and the team just forget about the engines — we do the development, we bring as many engines as they want, we tell the team when they've done enough hours, enough kilometres, we arrange everything. And we also manage the telemetry, the electronics — that is our job.

We expect to have to make about 50 engines for next year. The telemetry that concerns the engine is our task, but if Lotus want to use our telemetry to work on chassis, tyres, aerodynamics, we may have to arrange things so they can participate. The engine is our main responsibility. Now we have 64 people, I am trying to go up to 90 to cater for two teams. I feel comfortable, because my President is backing my people, Forghieri is making basically a very good engine, Chrysler is supporting us... I am a happy man. ■



Two teams, one heart: the 3.5 litre V12 Lamborghini engine

Lamborghini



# HAZEL CHAPMAN

## KEEPING IT IN THE FAMILY

BY TIMOTHY COLLINGS



Hazel Chapman glanced out over the beautiful grounds which surround her Norfolk home and looked back across the years. She showed no pain. No signs of anger or bitterness as she picked her way through the memories. As she considered the present ambitions and difficulties of Camel Team Lotus and the past glories inspired by the team's brilliant founder, her late husband Anthony Colin Bruce Chapman, there was only one regret she cared to divulge.

"I wish I had sat in and listened to one of Colin's little pep talks before a race," she said. "To know the secret. I wish I had found out what he said. He always spoke to the drivers. I called them his little 'pep' talks. He tried to motivate them and it nearly always seemed to work. I wish I knew that secret. We could certainly have done with a bit of it last year."

Seven years after Colin Chapman's death following a heart attack in 1982, Hazel Chapman remains loyally committed to Lotus. Though she may not go to all the races and admits to deep feelings of nostalgia about the great days of the past, she has retained a deep sense of purpose and ambition for the Grand Prix team created and inspired by her late husband's genius. "I have never felt like packing it all up at all," she said. "The only time I have thought about it is when the team is not doing very well and the results are bad! But I could not leave it. It is the team... THE TEAM... and it is obviously still very important. Of course everything is changing a great deal — it is all getting so expensive. But I have never thought of us packing in Formula One for a moment. "I truly wish the team could do better. It is depressing not to be winning and last year was not a good year at all. The set-up down the road at Ketteringham Hall is more or less the same as it was before Colin died except that, in my view, we do not have a leader to take his — Colin's — place."

"I have confidence for the future though. I think the arrival of Frank Dernie as technical director has made some difference. He has certainly got on with the new car and that effort plus the result we had in Australia at the end of last season did us all a lot of good. Everyone has responded very well and we are all very optimistic."

Mrs Chapman's undiminished enthusiasm for Lotus has no doubt been fuelled this year by the involvement of her 26-year-old son Clive who has



Above: And she still has the ear of the top people: with Bernie Ecclestone in Spa  
Main picture opposite: Low spot: Spa, which Hazel attended, saw both Lotuses fail to qualify

(Zoom Photographs)  
(Keith Sutton)

joined the modern Camel Team Lotus to "learn the ropes". Like his father, Clive graduated from University College, London, with an engineering degree before joining Price Waterhouse and learning, in addition to the intricacies of accountancy, "how to work".

Clive, who has two older sisters Jane and Sarah, has never in any way rebelled against his family, but stressed that his decision to join "the team" was a personal one and had nothing to do with any sense of filial purpose.

"I am only doing it for myself and not for my father at all. I have always wanted to be involved and always considered Team Lotus to be my future. Obviously, things would not

be as they are if Colin Chapman had not been my father, but that is not to say I am doing this for him. No. I am doing it for me."

Early inklings that he might like to take up a career in racing himself were comprehensively quashed by his father's tactical move in steering him instead towards powerboat racing. "I would have liked to be a driver, I think. But my father stuck me in a powerboat instead and I enjoyed it for a few years. Now, of course, I am too old to go racing."

Like his mother, Clive has a strong sense of nostalgia when thinking about Formula One. Both regret the modern age of rampant commercialism, the involvement of the international sponsors and the influence of the

Insert picture opposite: Still at the centre of things...

Below: High spot: Ketteringham Hall is the most aristocratic of team headquarters

(Zoom Photographs)  
(James Penrose)







The man whose pep talks Hazel wishes she had listened in on: Colin Chapman (Sporting Pictures)

engine-suppliers who, in Mrs Chapman's view, have reduced the sense of unity and team spirit which once characterised the Grand Prix pit lanes.

"We don't want to sound like a couple of old moaners complaining about everything," said Clive, who has come to terms with the modern realities of the racing world without any loss of his sense of purpose. "But it really is not how it was at all and, like a lot of other people, we miss the fun and sense of camaraderie there once was everywhere."

Mrs Chapman now finds she derives the greatest pleasure in her life from the grounds and gardens of East Carleton Manor and, as a result, she goes to no more than two or three races each year. "The grounds are at their best during the summer and I don't like to keep going away," she said. "I don't really miss it at all. If I miss anything, it is the people."

"We used to go everywhere and I suppose I have been to all the circuits. I used to love Brands Hatch, Spa and the Nurburgring. I still go to Monte Carlo each year and I also

loved Austria. Colin always loved Italy. He thought it was wonderful to race against Enzo and to beat him on his own ground.

"That sort of feeling has gone now though. There are so many distant big sponsors involved and so on. Now it is so much more like a business. It is all run on a more businesslike footing and we have had to do the same. It makes it more competitive, but we shall carry on of course as long as we have the support to do it."

As she talked Mrs Chapman revealed a restless energy. She adjusted pictures and ornaments to her satisfaction — a framed photograph of Colin Chapman stood on the piano — and became increasingly enthusiastic about the future of Lotus. She made it clear she disliked publicity and the disruption of the Formula One team by foreign elements and outside influences in roughly equal measure.

"We had a lot of faith in Gerard (Ducarouge) and we did very well for two or three years, but the feeling is not the same as when you have British people together," she

said. "The team spirit is different. It was great when we had Johnny (Dumfries) because we all enjoyed it and had a good time. I am sure it makes a difference."

Considering the recent period during which Camel Team Lotus were supplied engines by Honda, Mrs Chapman nodded in agreement as Clive said: "They were marvellous to work with and very professional, but this season with Judd engines and the Tickford involvement means it is up to us and us alone to demonstrate the potential of the Lotus team."

Without saying so, Mrs Chapman conveyed the impression that there was nothing she would like more than to see a British driver in a Lotus with a British engine winning a Grand Prix. She also suggested she would be delighted if Lotus could regain their once-proud reputation as the leading innovators in Formula One design and technology.

"I think research and development is very important and we are doing a lot now," she said. "It is what Lotus has always been good at and what Colin did brilliantly."

Her words prompted old images — the early years of Chapman's Vanwall days with Frank Costin in the mid-1950's, the Lotus launch and the Grand Prix debut in 1958 with the Lotus 16, the brilliant Lotus 25, launched at Zandvoort in 1962 as a trend-setting milestone in the evolution of Formula One cars — the first with a rigid aluminium monocoque, the title-winning season for Jim Clark, Graham Hill, Jochen Rindt, Emerson Fittipaldi and Mario Andretti, the wedge-shaped Lotus 72, the 'wing car', the Lotus 78...

Grand memories all, but tinged with sadness — Clark's death at Hockenheim, Rindt's at Monza and Hill's in an aircraft accident in 1975. Hazel Chapman had seen it all.

Yet still Hazel Chapman and her son Clive retain deep respect for the past and the present when many others might have cut and run. And they have maintained a loyal appreciation for the work of the men who inherited the job of running Team Lotus. But what would Colin Chapman have made of it all today? What would he think if he could return and take a look at the modern Camel Team Lotus?

"Oh, he'd be amazed," said Mrs Chapman. "He would be surprised the whole thing was still going. I don't think he would have expected it to have carried on as it has at all... and he would probably be delighted."



Location: Lotus Formula 1 team headquarters, Ketteringham Hall.

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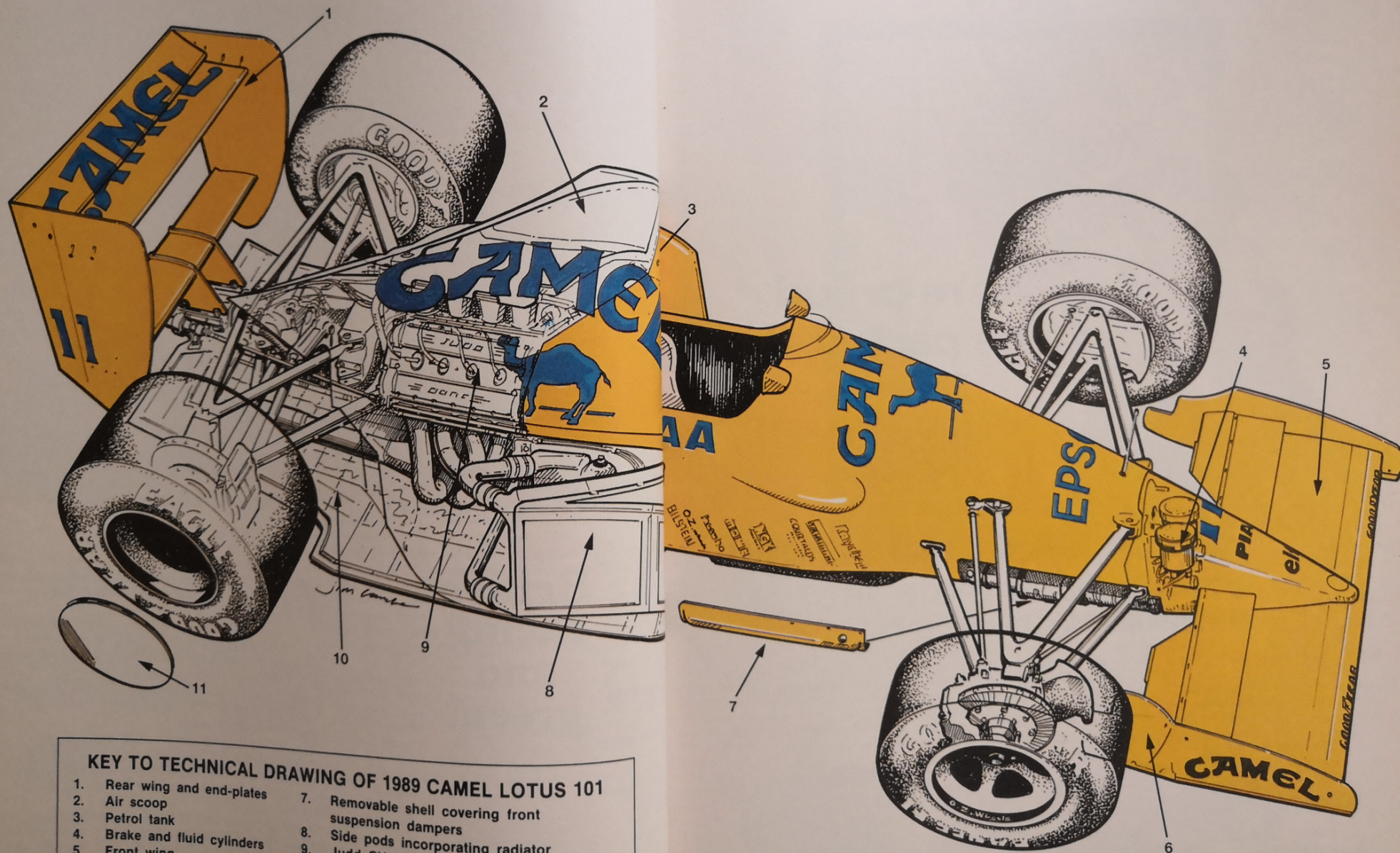
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# LOTUS 101 1989

As driven by  
Nelson Piquet and Satoru Nakajima



## KEY TO TECHNICAL DRAWING OF 1989 CAMEL LOTUS 101

- |                              |  |
|------------------------------|--|
| 1. Rear wing and end-plates  | 7. Removable shell covering front suspension dampers |
| 2. Air scoop                 | 8. Side pods incorporating radiator                  |
| 3. Petrol tank               | 9. Judd CV V8 Engine                                 |
| 4. Brake and fluid cylinders | 10. Aerodynamic undertray                            |
| 5. Front wing                | 11. Brake cooling and aerodynamic 'hub caps'         |
| 6. Contoured end-plates      |  |





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# TOTAL DOMINANCE



Total dominance — Clark waves the winner's bouquet at Spa as Chapman (left) looks on admiringly  
(Phipps Photographs)

## THE STORY OF JIM CLARK'S FIRST WORLD CHAMPIONSHIP

**D**uring the past two years we have become accustomed to the overwhelming superiority of the McLaren-Hondas driven by Ayrton Senna and Alain Prost. Back in the mid-1960s Formula One racing was dominated almost as convincingly by Lotus-Coventry Climax cars driven by Jim Clark, who was World Champion in both 1963 and 1965, and who also enabled Lotus to become Constructors' Champions virtually single-handedly on both occasions.

The writing was on the wall as early as May 1962, when the Lotus 25 — the first-ever single-seater monocoque — made its debut at the Grand Prix of the Netherlands. Ferrari had dominated 1961 by virtue of being the only team with a new engine (a V6) for the 1.5-litre Formula, but even so they had won only five of the eight races, the other three going to 4-cylinder Lotuses driven by Stirling

Moss (2 wins) and Innes Ireland (one).

The Lotus 25 was effectively a pair of fuel tanks with a Coventry Climax V8 engine mounted rigidly behind them. This engine had first shown its potential in the latter part of 1961, fitted in tubular Cooper and Lotus chassis, and with the extra stiffness provided by the Lotus monocoque it was clearly more than a match for the Ferrari V6.

In its first two races the 25 retired with gearbox trouble, while leading

**BY DAVID PHIPPS**





Zandvoort '63 — Clark leads from the start..

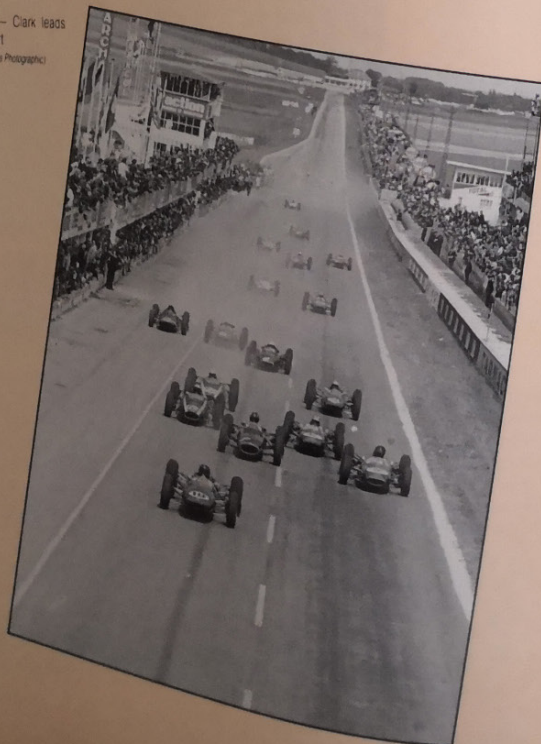
(Piggs Photographic)

at Zandvoort and while in second place at Monaco, but Clark won easily at Spa and was leading at Rouen when a suspension ball-joint worked loose. In the remainder of the season he notched up three pole positions (making a total of six for the season) and two wins, but was pipped for the Championship by Graham Hill's BRM — and by a loose bolt in an oil line at the final race. Clearly there was a great deal to look forward to in 1963.

No major changes were made to the Lotus 25 during the winter but the 1963 version of the Coventry Climax V8 had a shorter stroke (2.03 inches instead of 2.36 inches), and Lucas fuel injection rather than Weber carburettors; this change had been introduced in South Africa at the final race of 1962. Maximum power was said to be 205bhp at 9500rpm, but in reality few engines gave more than 195bhp.

Following non-Championship wins at Pau, Imola and Silverstone, Clark started the "real" season well with pole position at Monaco — to which he had commuted between qualifying and race day at Indianapolis, where he finished second. Bearing in mind that a lot can happen in 100 laps at Monaco, Clark started relatively gently, following the BRMs of Hill

Reims '63 — Clark leads from the start  
(Piggs Photographic)



and Ginther and not taking the lead until lap 18 — after which he pulled steadily away until his transmission seized as a result of selecting two gears at the same time. It was a problem similar to the one which caused Senna to spin out of the lead at Silverstone in 1989, but in Clark's case there was no advance warning. There were no such problems at Spa, where Clark led from start to finish in pouring rain to record the second of four successive victories on the daunting 8.76-mile Ardennes circuit, with McLaren's Cooper almost 5 minutes behind in second place. It was a similar story at Zandvoort, except that it didn't rain, and from pole position Clark not only led all the way but lapped the whole field! During practice the gearshift gave cause for concern, but in the race it performed faultlessly.

At Reims, noted (like the pre-chicane Monza) for slipstreaming, Clark somehow managed to shake off all his pursuers to win (again from pole position) by over a minute, even though his engine went off-song and forced him to change up at 8000 rather than the customary 9500rpm. He was helped somewhat by a rain-storm in the second half of the race, but would probably have held on to his lead — despite the engine problem — even if it had remained dry.

Silverstone brought another Clark win from pole position, though this time he started gently and didn't take the lead until lap 4. But by the end, even though he was easing up, there were only two other cars on the same lap.

At the Nurburgring there was a hiccup in Clark's progress: his engine was on seven cylinders for most of the race, and as a result he finished second to Surtees's Ferrari after starting once again from pole position. The six points nevertheless meant that he would be World Champion unless either Surtees or Hill won all of the remaining four races — which they lost all chance of doing when Clark won by nearly a lap at Monza after a long slip-streaming battle with Surtees, Hill and Gurney, all of whom retired.

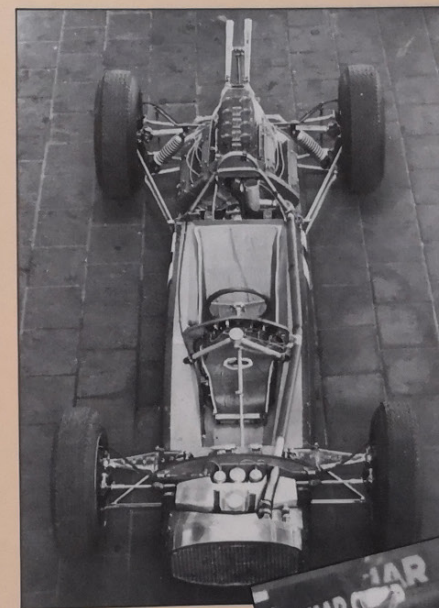
Having won both Championships with three races still to be run, Clark and Lotus could afford to slip up at Watkins Glen — and they did, a flat battery meaning that Clark started the race dead last, a lap and a half behind the field. But even this did not deter him, and he stormed through the field to finish third behind the BRMs of Hill and Ginther, repeatedly breaking the lap record in the process; but for the flat battery,

this would have been his sixth win in eight races.

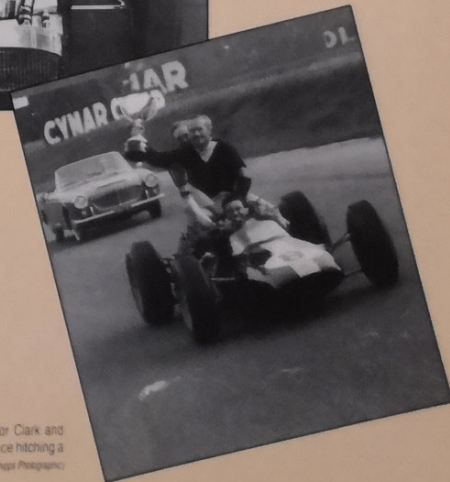
Win number 6, by nearly a lap, duly came in Mexico, and Clark's race performance was every bit as impressive as the way in which he out-qualified the rest of the field by 1.7 seconds; in addition to leading from start to finish, he also lapped 0.7 seconds faster in the race than in qualifying!

And so to East London, where Clark led for all but part of the first lap and won by over a minute after again starting from pole position. It was his seventh pole position and his seventh win from ten races, and with second in Germany and third in the USA his total points score for the season was 73; to the Team Lotus total of 74 poor Trevor Taylor had contributed just one point, for sixth place at Monaco.

At the time seven victories in a season was a record, not beaten until Senna won eight races (out of 16) in 1988. Jackie Stewart's best was six wins from eleven races in both 1969 and 1971, and Alain Prost equalled Clark's tally with seven wins from 16 races in both 1984 and 1988. But still no-one has matched Clark's 70 per cent success rate from 1963, and to improve on this it would be necessary to win 12 races in a 16 race season, which is a very tall order. Admittedly Grand Prix racing is now more competitive — and much more professional — than it was in 1963, but Clark and Lotus truly dominated Formula One then, and came close to repeating the act in 1965 with six wins from ten races. But in 1965 Clark only had six pole positions; perhaps he was beginning to rest on his laurels! □



First Formula One monocoque the Lotus 25, Zandvoort '62  
(Piggs Photographic)



Monza '63: lap of honour for Clark and Chapman — with Mike Spence hatching a lift as well  
(Piggs Photographic)



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Pensive, maybe — but the man doesn't see red any more

(Keith Sutton)

# MANSELL

## THE GETTING OF WISDOM

**When Nigel Mansell, the Isle of Man's most famous resident, threw in his lot with Ferrari, misgivings were voiced in plenty: how would this archetypal Englishman fit in at Maranello, a hotbed of politics as well as the hub of a fervent Italian motor racing scene? The doubting Thomases have been silenced: Mansell sounds and appears more relaxed than at any stage in his 10-year Grand Prix career. How come?**

I'm just able to view things in a much fairer light. I've got more time to understand other people's problems, whereas before I only had time to understand my own, and therefore it just makes the whole programme, for me, much more enjoyable. Last

year at Williams was obviously a very, very bad year, everybody could see that. We finished two races; OK, the two races we finished we had two second places, but I got very little satisfaction from last year because we were caught in a situation of transition from having the Honda engine and giving it away, then having a reasonable car and playing with hydraulic ride which never worked and wrecked the car, and not finishing. But this year we've finished six races with two firsts, two seconds and two thirds (as of Monza). I mean, I can't complain too much, really...

I joined Ferrari with basically a two-year plan. I said to them right at the beginning of the year, before I drove for them, that this year was basically a consolidation year to build for 1990. But if you were to add up the points in the positions in the races that I've lost through unreliability, simple things going wrong, I could be actually competing this year, to a certain extent, for the World Championship.

It has probably been far, far better than I could have ever imagined. It is like being in the inner sanctum of certain things - as long as you play it by the rules properly, and fortunately with me with my upbringing and with the police work I do, there are certain things you do and certain things you don't, and I always believe

**BY STUART SYKES**



there is a right and there is a wrong. They laid down certain foundations in the beginning, certain parameters which basically fitted in with my way of life. It is what I believe in, it is what I have been bought up to believe in so I have just fitted into a family I would want to fit into.

There is a code of practice that has to be continued because Ferrari is a mystique, it is very, very special and there are obviously a hell of a lot of political things which go on which one would not deny. But at Ferrari I can be normal, be me, whereas other places I have been to I have had certain restraints which have basically made me very uncomfortable.

The great thing about Ferrari is that they have accepted me for what I am and what I say, to a certain extent. I do not have to repeat everything and that is very satisfying. I do not have to ask twice for anything. I ask once and it is enough. In fact I am very careful in what I do say, because sometimes I make an odd remark, half joking, half serious, and they take it as gospel! Ferrari is the only team I have been with where if someone upsets them or upsets some of the people they are fond of, that person will be fired overnight. They do not mess around.

**While the bulk of this interview was conducted in Budapest, Nigel has subsequently learned that his team-mate for 1990 will be double World Champion Alain Prost. How does he react?**

I have never worried who my team-mate was as long as they are up and above board, and Alain is certainly up and above board. He is what I would call one of my few friends in the pit lane. We have played golf for the last ten years together. Alain was good enough to ring me and talk about coming to Ferrari. I do not think that I have ever been happier; this can only make Ferrari stronger. I support his arrival for several reasons, including the knowledge that he could perhaps bring on the engine front. Alain is a good driver, and he's a very good test driver. Between us I think we are probably two of the best drivers in the pit lane for getting things done.

He is not like Nelson Piquet so whatever problems there were in the past, there certainly won't be with Alain. I have driven alongside some great drivers, two or three World Champions and I have never really had too many problems on the track, so doing the actual job has been reasonably comfortable for me. Off-track, yes, with some of them.



Above: The getting of wisdom — on the track in Nigel's 1984 days with Lotus



Left: It was Williams who gave Nigel his biggest hand up, helping him to 13 victories



Below: But nowadays he is at home in a red cockpit

Where Gerhard Berger is concerned, he drives incredibly quickly, but he drives like I used to two or three years ago, whereas now I drive with a little bit more maturity. I try and get the car to do it. He does a lot of it himself. It's taken a long time for it to come to me and I hope it comes to him as soon as it came to me. With Alain there are a lot of pluses — in saying that there will probably be a few minuses, but I do not feel uncomfortable with that situation.

At the end of the day you have to ask yourself, why is Alain leaving the best team now, the most competitive; and the reason is that he is uncomfortable there. There is another driver in the other car there who is totally committed, probably too much so, which makes Alain feel very uncomfortable. Why should there be a problem with me? I think Alain is one of the few drivers in Formula One that appear to be at the right place at the right time. He has always been in a team with a good competitive car with perhaps an advantage. I think throughout his Formula One career to be able to do that, as many times as he has done, you have to be clued up on a few more things. Now I am starting to...

**The getting of wisdom is more than a mere matter of sorting out racing cars, and securing the best advantage you can in those cars. What does Nigel feel his time at Maranello has taught him about himself?**

I have learnt that there are far more things in life than Formula One. I have learnt that Formula One is a job to be done and a job to be forgotten at times. I have learnt that if you are a little bit more understanding to other people they will sometimes be sympathetic to your needs as well. I have certainly learnt that no-one, except myself, was terribly unkind to me in the last few years. I never gave myself a chance. I was doing too much. I was working with too many sponsors but that was a situation that basically Williams, not deliberately, put me into. I did not deliberately walk into it, either: it was a question of circumstances where the team was getting more and more sponsors, I was getting more and more endorsements and it is a treadmill that you can get on. You do not know whether to get off because money is coming from all over the place and you do not like saying no. There are times when you are committed contractually — you want to say no but you can't. What I have seen since coming to Ferrari, and the most refreshing

thing in my whole life this year, is that I have no commitments except to myself, the team and maybe a couple for Marlboro.

Conversely, what I have felt more than any other year before is how good and how fair the press are. I think basically because I am straight and honest I have got a lot of respect from the press this year, more than any other year because I tell them the truth. I think what has happened in the past is that people who have come to Ferrari have come too early in their careers. I have come later in my career. The pressure that is there to try and keep things secret or whatever is not there for me because I do not try to keep any secrets. It is therefore so comfortable and easy for me to do my job...

**Mansell on the Ferrari gearbox.**

A driver can adapt, and if the car's good he'll adapt very quickly. I've got used to ours, but there are certain drawbacks. We have found that having seven speeds on some circuits is a bit of a deficiency because it's 0.1 or 0.2 of a second every time you change gear even with our box, so if you change gear one more time than other people you've got to make that up somewhere else.

## THE GETTING OF WISDOM



Top of the pops in Hungary — victory number two in a Maranello car

You have to be literally in the programme and be in step, knowing exactly how many times you've pressed that button, because you haven't got time to look at the dashboard — and the dashboard more often than not has got a time lag which tells you you're in the wrong gear anyway.

So you have to synchronise the mind, you haven't got a physical position where you are in the gear. So long as you're in step and concentrating there's no problem. But I never realised before that sometimes you have the capability to relax your mind and just think about the race-track or how things are going, then go back to the next gear, because as soon as you do that your hand's like a computer, it instantly knows where it is. Whereas when you do that (pressing buttons right and left), and you forget, especially in the braking area, if you just pull one extra gear it's rather embarrassing going into a corner...

There are, too, circuits where the gearbox is a positive disadvantage. I'm thinking of Monaco: the difficult part is you don't use the clutch on braking, although I didn't realise at Monaco until going back there this year how much I used the clutch to feed in and feed out. The hardest part for me was coming out of the tunnel flat in seventh then coming down to second; and it's just like a motorbike gearbox — bang-bang-bang-bang-bang — and I found sometimes I was using first there as well. The problem was I used to jump from sixth to second, so I changed four times instead of one. If you synchronise it with the accelerator you get a little bit quicker change; if you get it wrong, then you rev the engine and it slows down. We've got a software package in there now that has slowed the changes down even more to save the engine and to save the gearbox: now that's good for the reliability of the gearbox, but the speed of the change has been slowed up.

I would say that in its present form it's no advantage at all. But the difference should be that you shouldn't miss a gear. But I've driven races in the past where I've never made a mistake, never missed a gear, so it depends on your driver. If you've got a driver who is always crashing the gearbox and missing gears, then this gearbox is going to be a big help. ■



# REQUIEM



# FOR A KINGDOM

BY GRAHAM GAULD

The Via Emilia which cuts its way diagonally through northern Italy from Milan to Bologna has seen history pass it by. Thirty years ago it was a slog to drive along it and one could imagine the Romans building it. But the Autostrada Del Sole soon removed its horrors and many of the small towns and villages along its route drifted back into semi obscurity. One of these is Modena and up to fifteen years ago Modena was almost the centre of the motor racing universe for it provided the testing facilities for most Italian private entrants and teams which settled around Bologna and Modena. In the 1930's there were races round the park in the centre of town but during the war a military airfield was built on the outskirts of the city right beside the Via Emilia and in 1950 the local Automobile Club ran their first Modena Grand Prix there won by Alberto Ascari in a Ferrari.

This was no testing circuit like Nurburgring, it was featureless and square shaped forming the perimeter of the airfield with a small chicane 300 metres after the start. Yet it became the centre of motor racing for 20 years before attitudes changed and physical senility overtook it. Towards the end of last year, after lying partly derelict for years the final death blow was dealt when the bulldozers smashed down the high wall which surrounded the circuit and after that Modena was no more. I remember reading Denis Jenkinson in Motor Sport talking about sitting at Modena Autodrome and watching the world go by, and back in those days it was true. I first drove down there in 1957 and those early trips remain in my memory as the perfect encapsulation of another era of motor racing, an era gone for ever. Being in Modena the circuit was about six miles from the Ferrari

factory at Maranello and about two miles from the Maserati factory down by the railway. Nearby in town there was Stanguellini and in a broken down garage at the circuit a young Argentinian racing driver called Alessandro De Tomaso built his own cars. It is ironic that today that same Alessandro De Tomaso owns Maserati and a lot more besides. Even then, thirty two years ago, the circuit was a dump. The huge concrete blocks that made up the road surface were scarred by deep cracks and everyone complained about how rough it was. If you stayed there for a week you got to know the pattern, Ferrari would arrive one day and Maserati the next, it was a polite arrangement and there was rarely much secrecy. Mind you one time I had a telephone call at my hotel from Ferrari team manager Romolo Tavoni to ask me to come to the Autodrome that after-



Main picture opposite: Derelict, the end of the straight on the old Modena Aerautodromo photographed in 1984. In the background is the gate through which Cabianca in his Cooper crashed into the Via Emilia which runs outside. Insert picture opposite: The familiar Modena signpost. Above: Phil Hill takes the first rear engined Formula One Ferrari out for its initial test run at the Modena Autodrome. Left: In happier days Mike Parkes prepares to test one of the special bodied 330GTO's prior to the Tour De France rally in 1963. Below: The first appearance of a Formula One Dino engined Ferrari at the Modena Grand Prix in 1967 which was won by Behra's Maserati. Anthony Rivers Fletcher of rivals BRM films the car at close quarters.

(All photo credits to Graham Gauld)



noon as they would have something interesting. As it was going to be a private test he would tell the gateman to let me in.

When I arrived the closed Ferrari van disgorged the first rear engined Grand Prix Ferrari ever built. Phil Hill and test driver Martino Severi were there to try it out and three weeks later the car made its debut at Monaco with Ritchie Ginther.

These were magical moments and even then you could see that Ferrari were always more serious than Maserati.

On another occasion Maserati had a clutch of Grand Prix and sports cars out testing including the legendary V12 version of the 250 F1. This beast was really only tamed by Fangio and Jean Behra, one using his great skill and the other his sheer bravery. On this occasion, however, the happy-go-lucky Harry Schell was present and he was given the V12 mule to use. He was trying hard but as with others he couldn't get used to the power band which was very narrow and came in with a bang.

All the Maserati mechanics were out to see this and Schell, probably wanting to show off, glanced over at the pit counter as he changed gear and promptly missed the gear. The engine screamed for a second and three of the mechanics immediately crossed themselves on the spot. Three laps later and a wisp of smoke saw the testing finish for the day.

Modena was also a tragic place. Eugenio Castelotti, one of Italy's many bright hopes of the fifties crashed his Lancia-Ferrari at the Esses and was killed and, worse still, Giulio Cabianca lost his brakes at the end of the straight, his car crashing straight through the wooden gates and out on to the Via Emilia itself where he was hit by a truck.

The last Modena Grand Prix was held there in 1961 when Stirling Moss won with a Lotus-Climax and from then on it was used for testing and by local car clubs. Then it was closed and houses were built on the site. To anyone who visited the Autodrome at its peak in the 1950's there was no doubt that it was the centre of motor racing. It was the host circuit for Ferrari and Maserati and at that time they ruled the world. But now the Kingdom has gone; goodbye old friend. ■





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### 1989 BRAZILIAN GP

During practice and the warm-up few would have put money on a Ferrari even finishing, the relatively new semi-automatic gearbox giving both Berger and Mansell severe problems.

However, come the race the story could not have been more different, Berger flying off the line to challenge Senna at the first corner, Senna unwisely trying to intimidate Berger into lifting off and effectively putting them both out of the race.

Patrese now led, soon to be challenged by Mansell who had to resort to some spectacular outside overtaking to pass. From then on it was fingers crossed through the pit stops and to the finish. A brilliant first time win for the Ferrari 640 and first race by Nigel in a Ferrari. A milestone race punctuating and hopefully ending the previous season's mind-numbing monotony.

OVERALL PRINT SIZE 28" x 22"

### 1988 LE MANS

The build-up to the Le Mans 24Hrs was one of great speculation and expectation. However, the great three-way confrontation was not to be: the Mercedes Team was withdrawn on the Thursday due to their tyre problems. But even with this sad event the race was still one of the most gripping duels in the Le Mans history.

Factory Porsches held the first three positions on the grid, the No1 Jaguar in fourth spot, the No2 car was sixth. From the outset it was Lammers No2 car which proved the quickest, moving into second spot soon after the start and into the lead after 25 minutes.

Into the evening the No2 Jaguar led but was being caught by the favourite Porsche followed by the No1 Jaguar. This lead although rarely relinquished was under constant threat throughout the long night and early morning. Mid-morning rain gave added vigour to the Porsche threat. The Le Mans race was only a certainty at three o'clock. The Jaguar of Lammers, Dumfries and Wallace, less than a lap in front of the Porsche, led a trio of Jaguars over the line to a rapturous welcome.

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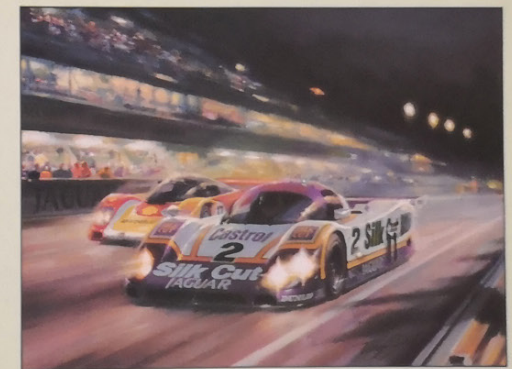
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(John Townsend)

# NICOLA LARINI

## KEEPING OPTIONS OPEN

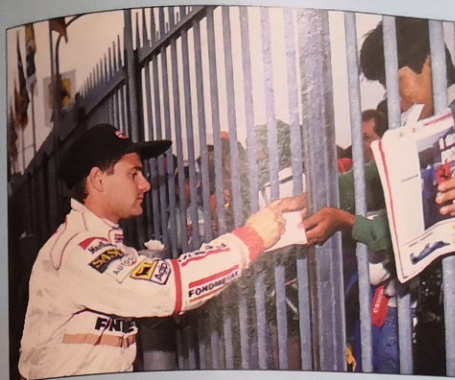
The Monza paddock buzzed with news. Prost to Ferrari; Piquet to Benetton; a new package at Lotus including Warwick, Donnelly and Lamborghini engines; Prost was furious about his treatment from McLaren and Honda... Almost lost in all the excitement was the fact that Ferrari had just signed Osella driver Nicola Larini to a three year option contract beginning in 1991.

It was Sunday morning and the start of the Italian Grand Prix was just hours away. In a quiet corner of the Monza paddock, far from the transporters, motor homes and hype of the big teams, Larini sat at a table in front of the Osella motorhome. Speaking in English which improves every weekend, Italian Larini talked about his Formula One career.

BY DAN KNUTSON

What about the option Ferrari had signed with him? "It depends on my next team for next year," Larini said. "If they want me to race for them in 1991, then I have to stay in this team. But if I race for them only for one year, I am free for Ferrari in 1991. It depends on which option they want to ask me for next year and for 1991".

Larini has spent 1989, driving for the little Italian Osella Ford team.



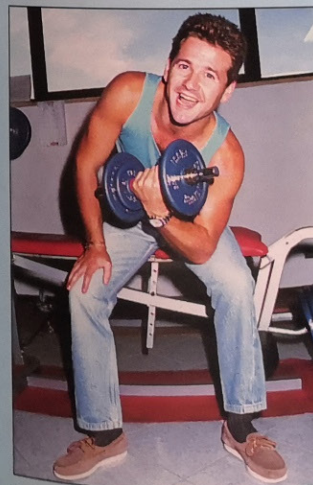
Rumours on pitlane said he was heading for Ligier in 1990. Were they true?

"I am speaking with Ligier," Larini said. "I am speaking with Lola. I am speaking with Onyx..."

The 25-year-old Larini is obviously in demand. He is currently the second youngest driver in Formula One, one day younger than Alex Caffi but older than newcomer Enrico Bertaggia who is still 24.

Larini may be young, but he has already been racing for 13 years. Born near Pisa, Italy, Larini started racing go-karts at the age of 12. His family supported his racing, and in 1982 he joined a driver training programme administered by the CSAI which is the governing body of motorsport in Italy.

"Then I did three years in Formula Fiat Abarth — and won a prize for being the best new driver in the single-seater Fiat Abarth series in 1983."



On the other hand, maybe it is!

(Allison Pascoe/Rondeau)

Price of being an Italian F1 driver: Nicola answers the autograph hunters at Monza

(Sporting Pictures)



Who said it was tough at the top?

(Allison Pascoe/Rondeau)

He finished ninth in the 1983 championship. The next year he won twice and placed third in the points standings. That season he also drove in Formula Three for the first time.

In 1985, driving for Enzo Coloni's team, he competed in a full season of the Italian Formula Three series. He finished sixth in the championship.

In 1986 the Coloni team used Dallara chassis fitted with Alfa Romeo engines, and Larini and teammate Marco Apicella staged an intense duel for the Italian Formula Three championship. Larini scored five victories and won the title.

The following season he made his Formula One debut at the Italian Grand Prix where he failed to qualify his Coloni. At the Spanish Grand Prix he managed to put the Coloni on the last row of the grid. His race lasted only eight laps before the suspension failed.

Larini competed in the entire 1988 Grand Prix season. It was a frustrating year in the uncompetitive and unreliable Osella turbo. He failed to qualify three times. His best finish that season was a ninth at Monaco.

This year Osella has a new chassis and Ford Cosworth power. That's the good news. The bad news is that Larini and teammate Piercarlo Ghinzani have to pre-qualify.

It hasn't been easy — in fact it has been the last straw for Ghinzani who

is quitting Formula One at the end of the year. With the likes of Brabham in the first half of the season, and now Onyx and Lola in the pre-qualifying hour, making it past 9am on Friday has been extremely difficult. To his credit, Larini has managed to compete in five out of the first 12 Grands Prix this season. His best finish through the Italian Grand Prix was a ninth at Imola.

Larini isn't happy with the pre-qualifying system. "I think that the pre-qualifying is not a good solution," he said. "It is difficult because there are some teams in the pre-qualifying that are able to test one week before the race."

Those teams obviously have an advantage over the teams that arrive with little knowledge about how to set up their cars for the circuit. And that's only part of the problem. "You have to do the pre-qualifying at 8 o'clock Friday morning," Larini said, "without knowing if there is a problem with the balance or the tyres on the car. It's difficult, but you have to go at the maximum right away. It's dangerous, very dangerous."

What solutions would he suggest for pre-qualifying? "It is better to do the pre-qualifying on Thursday," Larini said, "and to have one hour of free practice and one hour of qualifying. The most important thing is the free practice before the pre-qualifying



session. And not Friday morning at 8 o' clock, but one day before the official practice."

Larini made it through pre-qualifying at Monza. His Italian Grand Prix ended after 16 laps with a broken gearbox, but racing at Monza is very special for Larini.

"It is important for me," he said, "because I have won very much at this circuit. I know it very well. And I did the best race in my life here."

"It was in '86 in the Formula Three Lotteria Grand Prix. I did a good time and was in a good starting position. And then I won after a very, very hard race."

Away from the circuit, Nicola and his wife Barbara live in Viareggio, Italy.

How does he stay in shape for the rigours of Formula One? "I play squash and I jog," he said. "I like to play golf, and every day I ride my trial bike. Every week I train two days in the gym."

Larini drives an Alfa Romeo 164 on the street. And, speaking of road cars... "My father is a car dealer," Larini said, "and I think when I have finished Formula One that I will go with him to work in the same job. He sells Opels and Lancias."

When Gerhard Berger was injured in the San Marino Grand Prix this year, Ferrari gave Larini a test drive. He was to take Berger's place if the Austrian wasn't fit enough to race in Mexico.

Comparing the Osella to the Ferrari, what was the thing that impressed Larini most? "The power, the balance... everything was better!"

Now at Monza, two years after he failed to qualify for his first Grand Prix, Larini had signed an option contract with Ferrari. Was it a dream come true for him?

"Yes," Larini said, "it is important for a driver to race for Ferrari, but there are other teams that are important. If you have a chance to race for Ferrari it's good, but it's better not to think about Ferrari when you are in another team, you understand? You think of Ferrari when it's possible to go to Ferrari."

For Larini, one of the most promising of the new crop of Formula One drivers, that is a very strong possibility indeed. ■



Pumping iron is more fun this way — Nicola with his favourite wedding present

(Allsport/Pascal Remy)

Lucky man, in many ways, Nicola and his wife Gabriella

(Allsport/Pascal Remy)



Larini in action at Monza, 1989

(John Townsend)



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OUTSIDE LOOKING IN

# LAFFITE

STILL IN LOVE WITH FORMULA ONE

BY JOHNNY RIVES of L'Equipe

Shut out of Formula One by his 1986 accident, the bubbly Frenchman pins his colours to the mast as an unconditional backer of Ligier and Prost.

His career as a Formula One driver ended three years ago at Brands Hatch. His Ligier was well down the starting grid for the British Grand Prix: Jacques Laffite had encountered all kinds of problems in practice — an accident with Rosberg at Druids, a small fire at Bottom Bend — and was starting his 176th Grand Prix from the 10th row, beside the humble Minardi of a talented newcomer: Alessandro Nannini.

Laffite was no lone star at the back of the grid. Just in front of him were the Lola-Ford of Tambay and Johansson's Ferrari. He had hoped for better things, if only to justify all the compliments showered on him. That 13th July, he was about to match Graham Hill's long Formula One career. Even the son of the late great champion himself, Damon Hill, had come to pay his respects: "Glad it was a driver like you who equalled my father's record..."

Jacques was touched, and embarrassed. For him there was no glory in accumulating a record number of Grand Prix starts: "What counts in Formula One is winning: winning races and especially World Championships. What do people find so marvellous about the number of races driven in someone's career?"

Champion of the world was something he had never been. But he had compiled enough wins — six — to rank among the great drivers in Formula One history, and not so far behind the very best.

He was going on for 43, and it was already being whispered — nobody would have dared say it to his face, for fear of sparking off a storm — that retirement was on the horizon.

Yet Laffite had just driven a model race, a month earlier, in Detroit. On a track for which he didn't care one jot he had thrust his Ligier-Renault JS27 ahead of teammate Rene Arnoux, then reckoned to be the quicker man. Precise driving, aggression: Jacques still had what it took to run at the front, as he proved by leading the Detroit Grand Prix for several laps.

It was all the more astonishing because nobody thought the Ligier capable of such a showing. So a Ligier handled by old Laffite was



The moment that ended a career: Brands Hatch, 1986 — the 176th and last (Sporting Pictures)

even worse! But there it was, staring us in the face: the little French pilot still had it in him.

What he did not have that day was physical stamina — normally one of his leading qualities. Like all little fellows, all muscle and nervous energy, Laffite could hang on in there — usually. Carefree, impulsive, he hadn't made a point of eating enough at lunchtime, as his physio Pierre Baleyrier had advised. And right in the middle of the race he was hit by one of those raging hunger cyclists in the Tour de France complain of. It hit him just after his tyre stop, and hit him hard when he saw P5 on his pit board instead of the P1 he had been seeing up till then.

In the public's eyes it was a convincing result for Laffite: second, 31 seconds behind Senna, the same distance in front of Prost, the World Champion. Also behind him were Alboreto's Ferrari, Mansell's Williams-Honda and a few other big shots. It

showed Laffite still had an honourable part to play in Formula One.

He would have loved it to be that way at Brands Hatch as he took his 176th start. That 13th July — he'll never forget the unlucky date — Jacques Laffite's last Grand Prix lasted only a few seconds. The time it took to wind up his powerful Renault turbo engine, feel the punch of 1000 horsepower... and notice, to his front and left, the cream-coloured Arrows of Boutsen swinging out very wide. Just time to judge that, being well over to the right, he could get past the mayhem without mishap. Suddenly Johansson's Ferrari, just in front of him, turned broadside on to the Ligier. Surprised by the chaos breaking out behind Boutsen, Stefan had wrenched his steering wheel round. Trying to avoid spearing into the Ferrari, Laffite turned sharp right too. And ended up on the grass, doing 75mph as he headed straight for the barriers above the tunnel entrance. His career ended in a dreadful crunch followed by lancing blows to his hips, legs and feet.

Three months of hospital and pain, then a trying, endless programme of rehabilitation. But happy memories outnumber the sad so heavily there are no regrets for Jacques Laffite, no bitterness. He limps a little, can't play tennis as well as he did, and even the golf is not so easy. But he still races: in the Bigazzi team's BMWs in the Italian Championship, where he ranges his talents alongside those of Tarquini, Martini, Pirro, Ravaglia, Cecotto, Francia, racing regularly against them all. He is still fiercely competitive, especially when it comes to motor racing.

How happy he was that February day in 1987 when he drove a Formula Three car at Nogaro, just to see if he could still do it — and drove it with

Opposite page: Heart still with the Blues: Laffite, Ligier-Renault, 1986 (Sporting Pictures)  
Below: Jacques in 1985 action (Sporting Pictures)





panache, waving his fist in triumph to his friends on one of the corners, one hand enough to hold a superb four-wheel drift.

Of course the Formula One door was closed to him, although Ligier call on him now and then to look after routine testing. Laffite is still a passionate follower of the Grand Prix scene. If a TV or radio station would just think about it, he'd make a tremendous commentator: he comes out with simple statements of fact in a spontaneous way, a gift specialist journalists don't always enjoy.

The Laffite we interviewed was not the dispassionate analyst but the enthusiastic supporter. He has two Formula One favourites: Ligier and Prost, which is understandable enough — the happiest times of his career were spent with Ligier, and his heart is still with the "Blues, as they are known in France. His feelings for Prost are more spontaneous, more ambivalent too. Spontaneous, in the sense that this is a pure friendship with no ulterior motive. In 1983, when Prost was going through a bad time with Renault, Laffite was the one who was able to help him most, just by making him laugh, persuading him to take time off to enjoy himself — a bit of golf, tennis, cards — when

Alain was down in the dumps as he saw the world title disappearing. Ambivalent, because Alain displaced Jacques as France's favourite driver. But Jacques is not the jealous sort. While racing, it had always been one of his objectives to do better than Prost — and in Detroit, a few days before his accident, he had done it in style. But he was aware that Alain had gifts he, Laffite, would never match, and that things were in their rightful place. Ligier and Prost, then: two subjects dear to Laffite's heart. Let's start with the conflict between Prost and Senna. How does Laffite see it? "I was never in that sort of position. Maybe a little bit with Patrick Depailler in 1979, as rivals, but that didn't stop us being pals. I wouldn't have stood for anything that poisoned our relationship. I'd have made concessions that neither Alain nor Ayrton is seemingly prepared to make. I was racing for my team in a way they're not."

"There's nothing unusual in rivalry between two teammates of their stature, it would be unusual if there were not. What is not normal is the stage it's reached. I can't understand Alain's reaction — and Senna's behaviour even less. Going back to 1979, when Depailler came to Ligier,

where I had always been on my own, it was psychologically very uncomfortable — for both of us. He'd been brought in to shake me up, but we'd managed just one win in the three previous years, and I was well aware of that. The Ligiers won the first two races of that year's Championship, in Argentina and Brazil — and I took both those victories. That shut up the people who were ready to call me into question, but that's another story. It did my morale more good than it did his damage. Where Patrick was concerned, my reaction was to encourage him by telling him that if I was winning, it was because the JS11 was capable of it, and so he was bound to win too. And he did in Spain, when I made a bloody silly mistake."

So what would Laffite have done in Prost's place? Would he have left McLaren? What would his advice have been? "I'd have stayed at McLaren", is the answer. Competition with Senna? You're always fighting it out with someone... He must have been unhappy about the way some people behaved — certainly Senna, Ron Dennis maybe. When a marriage isn't holding together, it's time to break it up. He obviously had valid

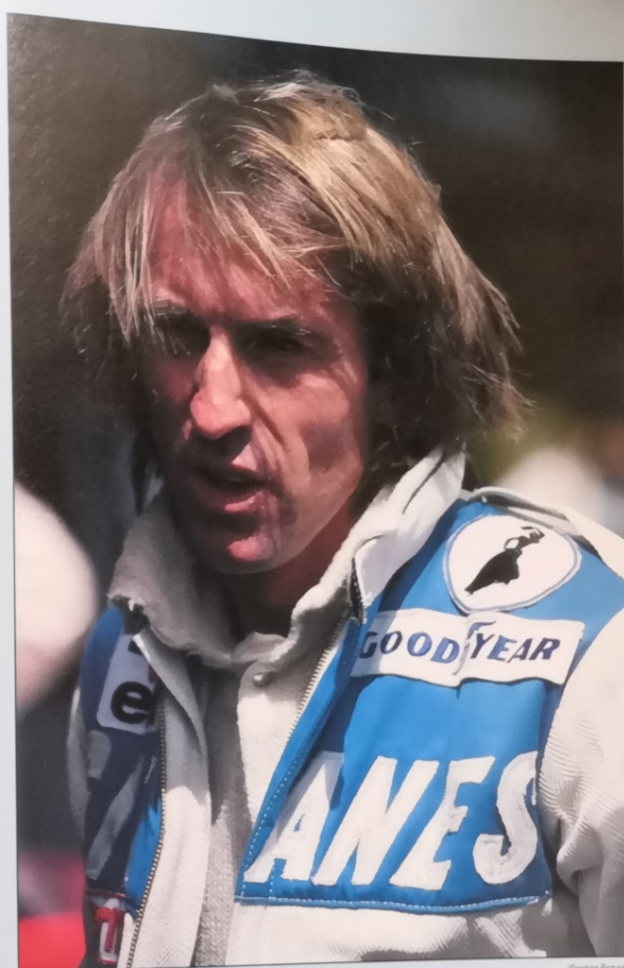
reasons for getting out. In Prost's place, if I'd decided to leave McLaren, I'd have been keen to prove I was still good. Only one way to do that: go to Ferrari. The Scuderia is enjoying a rebuilding process, Cesare Fiorio is a dedicated manager. We've all dreamt of going to Ferrari, driving that red car.

"Ferrari is first choice. Alain has often had it in his grasp without quite getting there. I don't know why: this time it was the right time. Ferrari is at the start of a bright new era, Alain will derive tremendous benefit from it. At Ferrari, they will all hang on his every word, right up to the top levels in Fiat itself. His influence will be enormous, it will be fabulous for him. The Italian presence is felt all over the world, their elegance, their passion. Every time he visits one of their outposts he will be greeted like a king, he will have some marvellous experiences. I envy him being in a position to achieve something which, for me, will always be only a dream. You have to have been in Formula One and left it to appreciate the happiness it represents: racing at the top, intense pleasure, a wonderful life — with Ferrari Alain will touch its very peak."

Jacques Laffite cannot broach the subject of Ligier without linking it directly to Renault's return to Formula One, which happened in the form of an exclusive partnership with Williams, to the detriment of every French team — especially Ligier. "It's perfectly natural for Renault to have chosen an association with Williams", Laffite says. There was no better option, Williams was the only top team available. I'd have gone down the same road, but unlike them, I'd have gone for a second team. A French team, and not just any old team: Ligier. The public would have welcomed that, as a nice gesture from Renault — nice to Ligier, nice because it's a long time since there was a Grand Prix car that was 100% French.

"Why Ligier, you may say, why not Larrousse or AGS? The answer is simple: because Ligier has long been the team in French blue, it remains the most credible standard-bearer thanks to the tradition behind its name. I'm a Frenchman through and through, that's how I react and I'm sure how a large proportion of the French public would react as well."

"Ligier would deserve such a show of confidence and respect, and not on past performance alone. He has just restructured his team completely, giving it a solid technical basis, and a



One of Formula One's most distinctive faces.

(Sporting Pictures)

Teammates past. Laffite with Arnoux, in the pink sweater, with Ligier in 1986



(Sporting Pictures)

superbly-equipped new factory at Magny-Cours — and with a circuit on its doorstep. What Ligier needs most is a top-flight technical co-ordinator. The whole technical infrastructure is in place, the factory is fantastic, they're now building their own carbon fibre monocoques — and it's high-class work. The work on the track is top-quality too: it's only a short step now from what they're doing at Ligier to achieving first-rate results. They need someone strong enough to pull together everything that Ligier has set in motion. At that Magny-Cours they have all it takes to do great things, and for me all Guy has to do now is find the keystone of the whole edifice: a technical director in the same class as Barnard, Head or Murray."

The words of Jacques Laffite: loyal — and still in love with Formula One. ■



The combination Jacques has been longing to see come true with Prost's Monza announcement. (Allsport/Pascal Rondel)



# LOVE HATE RELATIONSHIP



BY PATRICK CAMUS

Having plumbed the depths last season, Arnoux can't get back up again. This time it can't all be put down to the car. Time to enter the confessional: with all the sincerity, honesty and clarity that makes him such a rare Formula One specimen. "Poor old Rene's finished. Qualifying is a bigger and bigger mountain for him to climb, because he's got no motivation. And did you see what happened at Monaco or Silverstone? Absolutely crazy, some of his moves. He blocks everybody dangerously — you'd think he'd lost some of his field of vision! Maybe we should be thinking of drugs testing in Formula One. And

as for set-ups, don't talk about it, it's beyond him..." There you have a digest of what people in Formula One have been saying about Rene Arnoux. For some people, other people's distress is something to be exploited. Now where distress is concerned Arnoux has had more than his share — much more. His haunted look shows it more than the things he says. He thought he'd seen the end of it last year, with the original and striking JS31 with its double fuel tank. It was a monumental mistake: and yet he looks back with mixed feelings. Sometimes he catches himself thinking

it wasn't so bad after all. Maybe it needed more development, more time. Maybe a team like McLaren would have known how to make it work? "We still don't know what it was on that car that didn't work", he explains. "Taken on their own, the wind-tunnel, chassis, suspension systems all gave exceptional results, but when you put it all together the whole thing just didn't work. Its weight was also a troublesome factor. And the mechanical complexity didn't help. The JS31 was a very difficult car to get the best from and, because of that, difficult to develop. And yet, the day Ligier put the

project to him, Arnoux gave his full backing. "To me it looked a great idea. The lines were soft, low, the balance of volumes just perfect. The only thing that worried me was that very complexity: for me, a Formula One car should be simple, so you lose no time in completing it and developing it." The rest is common knowledge: the lovely JS31 was a resounding flop, from which Ligier had a hard time recovering. For his part, Rene found failure to qualify hard to swallow. Last year at Silverstone, sadly, we saw the full force of what it was doing to him. Half-an-hour after Saturday qualifying: locked in his motor home, Rene, confronted by a handful of journalists, was in tears. "Yes, I snapped. I cried like a baby. Not so much about not qualifying — a sportsman must always be prepared for the worst — but because I had just been fighting so hard with myself and with a car that would not run properly. Some drivers set a good time with a single lap: I'd just put in 20 laps on the very limit. For nothing. One or two tenths wouldn't have helped — I needed seconds. And nobody can imagine what it's like to do 20 laps in those circumstances, expecting to go off, flirting with a spin every second. You have to live through moments like that, that level of pressure and stress, to understand. That's why I snapped..." Arnoux is still on those limits because the JS33 is no more competitive than the JS31. Even worse, he is so caught up with his own obsession he forgets where he is — and that brought him some deeply-felt criticism from colleagues at Monaco and Silverstone. Today people call him unthinking, dangerous and this year's British Grand Prix saw a fierce flare-up between him and Thierry Boutsen. "I've never been one to bite the hand that feeds me but, you know, Formula One really isn't what it was: it hasn't worn its own development well. Straightforward relationships have gone, in fact there aren't any relationships, any atmosphere. Everything's become false and hypocritical. There's aggression in the air the whole time. Why? Money! That's all that matters.



Opposite page: "racing in the wet is still great fun" Arnoux at Spa, 1989  
Top right: "I've been a winner, too" in France, for instance, with Renault in 1982, ahead of Prost (left) and Pironi

Centre right: Teammates — and good friends: Arnoux with Olivier Grouillard (left)  
Bottom right: Typical Arnoux: head forward, on a charge, with Ferrari in 1984





Nowadays you can't put in a qualifying lap without seeing an arm shooting out of a cockpit, a finger pointed skywards. It's terrible — these drivers aren't sportsmen any more. They say I ignore the blue flag? That's not true. I respect them to the letter when it's me they're being waved at. And if they aren't shown, today's rear view mirrors are not going to be much help. In Monaco, only one driver didn't complain of being baulked: Senna. And he won. So he didn't need to look for excuses. I've led Grands Prix too. I've won seven. I've caught backmarkers too. I've been baulked at times too. I've lost time and my temper. But I've never criticised anyone. At Silverstone Boutsen came to yell at me because I'd spoiled his flying lap. So what? In the first place I'm not so sure I did, and if so it wasn't deliberate, but on top of that I believe that sort of incident is only to be expected in this sport. Overtaking's a part of the game, isn't it? Prost hates it, Senna pays no heed, in fact it's often his passing manoeuvres that make the difference — who does Boutsen think he is? One win in Montreal, down to luck, and he's a star? Let him come and see me after the seventh proper victory! It's too easy to justify yourself by reference to other people." Angry, yes, but still not malicious. The years and setbacks have changed Rene's character — as has the birth of his daughter. For her he's made himself a new man. For her, he's Nene, the doting father, not the crazy guy as known on and off the track. "Talk to me about my daughter and I'll gladly tell you she's the nicest thing in my life — the only true thing."

The first non-qualification in Rio could be put down to new equipment which hadn't even run in private tests. On top of which there had been a quiet close season with no training. Failure was harder to swallow at Imola, where Grouillard qualified 10th. Had the Grenoble driver's talent suddenly faded? Had his motivation not made it past the 40 mark? But let's face it, after 11 years in Formula One Rene hasn't much left to prove, except the odd idee fixe of his own. Like the fact that his seven wins are now in the distant past, or that he was as good as the best without reaping the full reward, the world title. Or that for him Formula One is a driver's only reason for living. Motivation? Even sharper now, after years of adversity and inferior equipment. "It's easier to win with a good car and an engine above the rest than to qualify in a bad car. I

know people refer to my age, but for me it's no handicap. Development work, private testing hold no fears for me. Nor does being quick — just give me the chance! Sure, years of racing take their toll, but as long as I still enjoy racing as much I'll know I belong in a cockpit. Racing in the wet or in a pack of cars is great. Why give it up? The only thing I can't take is doing it by halves. Of course, I'm no Senna in the sense that I can't fight the passing of time, but I have my place." Does anybody accuse Patrese, De Cesaris, Cheever... Mansell of lacking motivation? And yet they've been in the job nearly as long.

Arnoux counters psychological factors with his own technical arguments. Everything about the JS33 was new, not just on the technical level but in the whole approach — and that completely threw Arnoux. "I had terrible problems adapting to it. With no testing behind me I was absolutely lost in Rio, muddling around in the settings. Basically I think the JS33 is sound, it reacts perfectly to different set-ups. Sadly for me it has nothing of the classic Grand Prix car I've had to drive up till now. That is essentially down to the technical approach of the engineers, who fall into two schools these days. On the one hand, McLaren and Ferrari, whose cars are very stiff but allow some suspension movement; on the other, Benetton, March, Arrows and others whose chassis are devoid of all movement.

Heaven help anyone like Ligier or Lotus who tries to keep a foot in both! Nowadays we're up against real karts which allow no compromise — not even in driving. A flowing, precise style of driving is no good any more. You have to be savage with the wheel, rely on brute strength, not natural at all. I have to force myself to do it. It's as if, after 10 years of driving a big American limousine, you bought yourself a Porsche 911. And those brutal reactions are worse still when you've got to get the utmost out of the car." But what about Grouillard's good performances at the start of the season? "Olivier — and I am very pleased for him — was in his element straight away: his Formula 3000 Lola worked on the same suspension principles, with less than 20mm play. And with the return to atmospheric engines he didn't have to get to grips with turbos. So he's not going to be thrown by the 80 horsepower between a 3-litre and a 3.5-litre engine." But now the two are performing more or less equally. So the limit isn't human but technical. Even if it's easier to

use than the JS31, the JS33 still isn't the dawn of a new era for Ligier! The top of the iceberg holding it back is clear to see: it's bulky and, at 545kg, heavy. Its major defects are of course harder to grasp. What do the engineers say? They're lost themselves. "As long as the Ligier team lacks a top-quality Technical Director we shall make no progress. The only example worth following in Formula One right now is McLaren. You only need to spend a few minutes at their garage to understand: it is perfection. Orderly, clean, organised, motivated... magnificent. It makes you want to work! All right, McLaren probably enjoys the biggest budget, the best engine, best engineers, but the precision and organisation are trumps cards too. And those can easily be brought to bear. At Ligier, too many things have been allowed to slide. I talked to Guy about it several times, and he soon got the message: reorganised his team, took on new staff. The only thing missing is that Technical Director, the co-ordinator without whom no real progress can be made: a leader who can bang his fist on the table, delegate, make the right decisions."

Guy Ligier has indeed moved things along. New staff, yes, but also an autoclave, a track and shortly a wind-tunnel. Only one problem: the nationalities of his key men. English, American, Brazilians, French... not

easy to manage! It's sometimes hard to define data, to be fully understood, mainly because of the variety of languages. Given all these difficulties, the Ligier/Arnoux axis has had some tricky periods, to the point where it seems certain Rene will no longer be a Ligier driver in 1990. The two men respect each other and have a lot in common, such as their love of racing and their common sense. And, on occasion, limitations on the character side. "Like everyone in this profession Guy has his own character. You either like him or you don't. I don't think there's any problem between us. His legendary slanging matches are often very understandable — just like his quiet spells. Nowadays, if things aren't going well, he doesn't shout any more, he shuts himself in the motor home and keeps his jaws clamped shut for a couple of hours..." Harsh words on one side, hot temper on the other. Both of them want it to stop. Are a team boss and a driver really the ones to blame? "A Grand Prix isn't won on race weekend but in the winter testing, and in the drawing office at the factory. The driver gives his all, but it's the car that decides. If truth be told I'm the last link in the chain. Give me a good car and I'll show you! Of course the motivation at 40 isn't what it was at 20. But in a race it's absolutely identical, as I think my Canadian Grand Prix showing proved. Despite

all the troubles I've had these last few years, I still take great joy from being behind a wheel. That's why I won't hang up my helmet." Success with Renault, glory with Ferrari, no luck and disarray at Ligier. There is still hope. Maybe his love of racing will help him find a good drive, something to round off a career turned sour. "A career that will probably leave me with an unsatisfied feeling. Even if, taken as a whole, it's let me lead to the full a life full of good things. A Formula One driver has no right to complain or regret anything because he has had an extraordinary life. The rest — victories, retirements — is purely marginal, circumstantial. The only thing I might have genuine cause to regret is not having achieved the goal I set myself, the world title. But a restrained regret because I'll say it again, a racing driver has too many parameters to rely on." We're not at that point yet. The '89 season hasn't ended and Arnoux is already talking about '90. If we must talk about drugs, Formula One is surely one itself. "People have been talking about that for ages! It would seem that's why I was ousted from Ferrari... let the doctors do a blood test. They'd certainly find traces of vitamin C, and mineral salts." And perhaps of disappointment. "Really, there's no end to some people's meanness..." ■



"Twisting in the pack is fun!" but at Monza he was just too far back...

Top: Other happier times, competitive for Renault in the RE30B (Bernard Pons)  
Centre: Three years ago, there was a sparkle in the eye (Bernard Pons)  
Bottom: Two men with a strong character in common, Rene and Guy Ligier (Bernard Pons)



# F1 CAR SAFETY

Since motor racing first began, the quest for improved mechanical performance has never ceased. The continual search for improved bending strength and torsional rigidity in chassis design has, for obvious reasons, led to greater overall strength, and this in turn, has led to some degree of added driver protection; but the major strides in this area have come with the advent of the composite chassis or monocoque.

In the formulas, with high-horsepower engines and the resultant high speeds, this quest for improved mechanical performance has, in many cases, reached the point where the more conventional tubular space frame and the single skin aluminium monocoque have almost reached their development limit; and the availability of high performance composite materials, such as carbon and kevlar fibres in suitable matrix resin systems, has enabled the designers to take the mechanical performance and safety levels of chassis design to much higher levels, coupled with a new potential performance horizon.

The immense improvement in mechanical performance offered by composite materials in race car construction is shown by the improvement in one very important area, that is, torsional

stiffness. This means the resistance to twisting. To measure this the chassis or monocoque is anchored in a jig by one end and a twisting load applied to the other end. The load required to twist the chassis for each degree of movement is the standard by which this form of mechanical performance is measured. The immense improvement offered to chassis performance by the use of composites is illustrated by comparing the torsional stiffness of chassis made from conventional materials with modern composite versions.

At the end of the period when Formula One chassis were tubular

space frames, the torsional stiffness of a good example would be in the region of 2,500 ft lbs per degree. With the advent and development of the single skin aluminium monocoque, the torsional stiffness improved to 3,500+ ft lbs per degree. The current form of composite Formula One chassis has been developed to produce a torsional stiffness of approximately 12,000 ft lbs per degree. Mechanical performance has shown similar improvements in other areas of structural performance.

This outstanding improvement in structural performance has been due to the use of modern composites; carbon

fibre being used in conjunction with honeycomb as the main contributors. The carbon fibre is processed into a skin onto both sides of the honeycomb to form a sandwich structure. By optimizing the carbon fibre's potential performance, and selection of the most suitable honeycomb type, the designers have been able to arrive at chassis or monocoque with outstanding mechanical performance as seen today.

Carbon fibres used in this form of structural application come in many forms and types, the types being variations in modulus. This is a form of fibre performance measurement,

and is arrived at by using **STRESS/STRAIN**.

As a general guide, the higher the modulus the stiffer the fibre. This does not make the highest modulus the automatic choice, as the higher modulus materials produce more brittle structures.

These carbon fibres also come in woven forms, and there are many weave styles. Each weave style makes it more suitable for specific types of application; that is, some weave styles are more drapable, which means they are much easier to form into very complex shapes. To add to the range, most of the weave styles are

produced in several different thicknesses and weights.

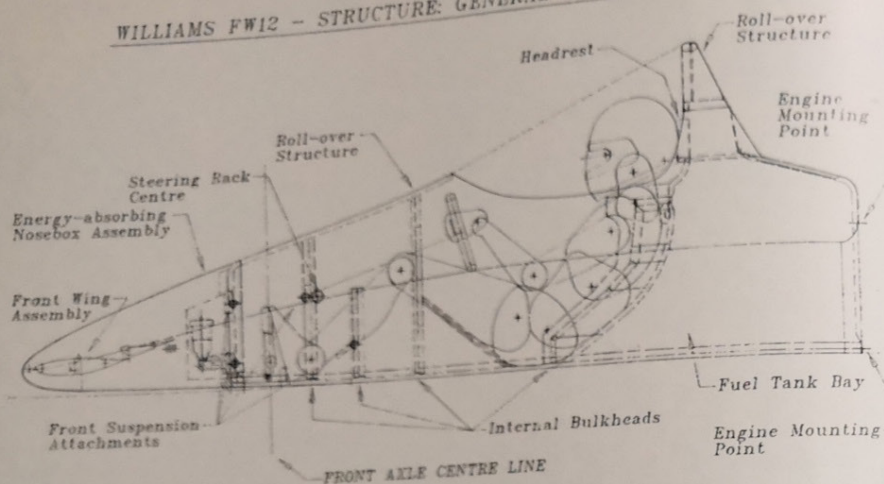
Most of the fibres can also be used in unidirectional form, that is, they are not woven. This means the fibre is as straight as possible within the component. This ensures, under certain conditions, the optimum performance is achieved for that particular fibre.

The use of unidirectional fibre will only suit certain circumstances, as it is more difficult to use when complex shapes are concerned. It is, however, a widely used practice to use woven fabric and multidirectional fibres together, the unidirectional fibres being used strategically to enhance a specific mechanical performance in certain areas of the component. This is where the designers can use their skill to optimize the potential performance of composite materials.

In some cases these various fibres and weave styles are used by the wet lay-up method, particularly in the manufacture of moulds; but the components used in most race car manufacture, including bodywork, are manufactured by dry laminating. This is carried out by using the selected fibre and weave style in a preimpregnated form; that is, the matrix resin, in most cases an epoxy, is impregnated into the fibre and supplied in a dry form.



# WILLIAMS FW12 - STRUCTURE: GENERAL ARRANGEMENT



The prepreg, as it is called, is cut and tailored to line the mould, the required thickness being arrived at by selection of the required number of prepreg layers. In many structures, including chassis or monocoque, the required stiffness is achieved by the use of honeycomb material as a core between two skins to form a sandwich structure. Once the component is completely laid-up in the mould, it is cured at an elevated temperature, usually 120°C or higher. The resin first melts and flows to form the laminate, and the extended time at temperature then completes the full cure of the resin. To ensure that during the cure process the layers are consolidated together and forced to the mould surface by the use of vacuum, a heat resistant sheet is sealed round the edge of the mould to cover the component. Vacuum is applied, resulting in an even overall pressure of one atmosphere applied and maintained during the whole cure cycle. This brief description of the processing of modern composites serves to illustrate the versatility of this exciting engineering technology. This versatility has enabled the designers of modern racing cars to achieve the previously mentioned advanced mechanical performance. This has in turn, led to an equally, if not more important improvement and that is driver safety. This driver safety level has been demonstrated many times over the

last few years. Where horrific looking accidents have taken place, many where the bare monocoque is all that appears to be left, the drivers not only survive, but in many cases, walk away almost unhurt. In almost all cases, if the same or similar type of accident had happened to a car with a tubular space frame or alloy monocoque, the driver would almost certainly have been killed. The immense strength potential offered by modern composite materials and techniques has been recognised and utilised by the designers and the controlling authorities as well. This was shown in 1985 when the frontal impact test for Formula One chassis was introduced. The frontal impact test called for a fully representative chassis front section and nosebox to be impacted by a mass of 750 kgs, at a velocity of 10 m/s. This equates to an energy of 39 KJ. This energy must be absorbed by the structure, and the resultant damage be contained within the area ahead of the driver's feet, whilst the average deceleration must not exceed 25g. The introduction of this impact in 1985 resulted in a great deal of effort by the designers to improve this area of car design, and the versatility of modern composites enabled the target performance to be achieved. 1988 saw the introduction of another obligatory test, this being a lateral crush test. The aim being to ensure

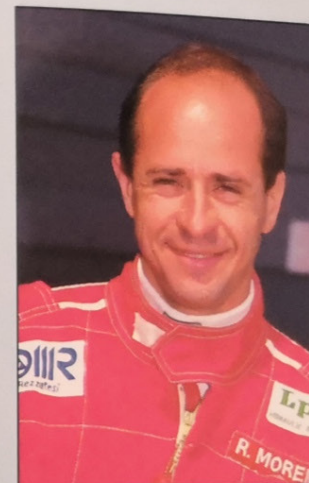
that the side of the chassis or monocoque meets a side load requirement. This test is not an impact test in the same way as the nosebox, but a static fixed load application. A solid pad 300mm x 100mm under load of 2,000 kgs is applied as a static equivalent to two positions, the cockpit level with the driver's hip, and the centroid of the fuel tank. Under the load there must be no detectable damage to the inner skin of the sandwich shell structure and a deflection maximum of 20mm must not be exceeded. In a search for even greater safety, the Formula One Commission is adopting yet further changes and tests to Formula One race car chassis. From 1st January 1990 the cockpit openings are to be larger for better access, rear-ward vision is to be improved, the lateral protection of the driver is to be improved by a 10cm increase in height of the chassis or survival cell. In addition, there is to be a new crash test for the complete chassis or monocoque, with 20% more energy absorbed; also tests to the side of the nosebox, pedal and steering wheel areas; the fuel tank area will be subject to some test criteria. In conclusion, and as stated before, the immense improvement in driver safety that composites have given motor racing, will again be utilised to meet these new safety requirements, and afford even greater driver safety. ■

# CART BEFORE THE HORSES?

ROBERTO

# Moreno

Roberto Moreno is optimistic. Optimistic despite the fact that by the Italian Grand Prix, the 12th round of the season, he had only driven in three races. Optimistic despite the fact that since the British Grand Prix he had failed to pre-qualify for five consecutive races. Since Silverstone Moreno has had to join the ranks of the pre-qualifiers. That made the tough going for Moreno and the Coloni team even tougher. Yet, despite all the frustrations, the 30-year-old Brazilian is enthusiastic about his future. At Monza, after failing to pre-qualify for the Italian Grand Prix, Moreno explained why. "I think it's part of the deal of your first year in Formula One", he said. "It's tough. If you don't have any money, you most likely go to the small teams and have to pre-qualify. The unfortunate thing this year has been that our new Coloni was only ready for the Canadian Grand Prix; almost half the season was gone. And between then and now we have done only a couple of days' testing. "That's been our basic problem so far. With the testing we have done we have improved a lot, but we struggle because the other people who are fighting with us had new cars in Brazil. We are within half a second or seven tenths of a second of making it. So I think we have done a lot, but not enough yet." Does he have trouble keeping motivated? "Not at all", Moreno says. "Formula One is my life. I see it very positively. In your first year you always struggle. Next year I will make the second step. That's going to happen. "I did a couple of Grands Prix with AGS in 1987. Now I have done a full year of learning everything — all the circuits and about the systems in Formula One." Moreno is the only driver in the current Formula One ranks who has



Smiling in the face of adversity: Roberto Moreno (Sporting Pictures)

also competed in the American CART Indy Car series. He drove in five Indy Car races in 1985 and then did a full season in 1986 behind the wheel of a Galles Racing Lola. What are the differences between driving a Formula One car and an Indy Car? "The Indy Cars still have ground effect," Moreno says, "and they are much heavier cars so you have to work harder with the brakes. The time it takes to stop an Indy car is much longer than for a Formula One car. Plus we use carbon fibre brakes in Formula One which are a lot better than the normal steel disc brakes that they use in Indy Cars. "In Formula One you arrive in the corner much later with your foot still down on the accelerator, while in the Indy Car you would have been braking a long time by then. In a Formula One car you just jump on the brakes very quickly and make the corner. In an Indy Car it is much slower. It is more or less as Formula

One was before the carbon fibre brakes arrived.

"On top speed the Indy Cars are quicker. The acceleration is a lot quicker in Formula One because it is a lighter car, so your time of reaction in a Formula One car has to be a lot quicker. But this is one of the things you adapt to.

"In Formula One you go as fast as you can through the whole race. In the Indy Car you can use strategy to achieve the end result, because normally at least once in the race you are very likely to get a yellow flag where everyone closes up behind the pace car and you have another start.

"In Formula One you also have strategy, but you don't slow down so much as you do in the Indy Cars. In the Indy Cars you get at least three or four pitstops during a short race. So a lot depends on teamwork — pitstops, fuel and tyres.

"With the Indy Cars you have five mechanics who are allowed to work on the car — so you have two to put in fuel and three to change tyres. In Formula One you have as many as you like. That's why we can do quicker pitstops in Formula One than in Indy Cars.

"So, because you have to stop so many times in Indy Cars, the team works with you, making the decision to come in at the right time when the yellow flag is out. It might make you win a race.

"Not to say that one is better than the other. I like both. I really rate Indy Car racing, and I will still drive an Indy Car one day.

"But it is very crucial to be young to start in Formula One. In Indy Cars you can start a bit later. That's why, after my experience in America which I liked very much, I decided to come back here and go a step down in the formula to F3000. And to try again in Formula One while I am still 30."





and the feeling of a good car before my first full year in Formula One. "It was very, very hard work. It was the first year I didn't go to Brazil for a long holiday. But it paid off because I learned SO much. They rate me very much for what I have done. "I learned a lot. That's what's important in my life — anything that I can use to take me farther up is always a gain in my life. "Racing is all I do in life. I will take whatever road I have to be in Formula One. And as long as I can see that I can still win, and that I am making progress, I will still fight. That's my first priority in life: I am here to win." ■



Far left: Roberto has spent most of the season trying to escape from the mesh of pre-qualifying. Above: Heavier, faster — but fun to be involved with: Roberto in 1986 Indycar action. Below: Faster reflexes required: Roberto at work in his Coloni F1 car. Bottom left: The Lotus theme from this issue recurs here too: Roberto had his first taste of F1 as stand-in for the injured Nigel Mansell at Zandvoort in 1982. Bottom right: Long, hard look for improvement.

(Dominique Levy)

# STRAIGHT LINES

## THE DEREK WARWICK COLUMN

Did I really say last time that I was looking forward to Spa? I know the place takes its name from people going there to take the waters, but the weather we had to take at this year's Belgian Grand Prix was just a little too watery!

But Spa is a very special circuit as far as all the drivers are concerned. For this one in particular it was even more special this year, as race day coincided with my birthday — and no, I'm not going to admit how old I was! Hard though I had tried to keep it quiet, someone was bound to spot the coincidence, and sure enough, I received a giant birthday card signed by all my friends in the paddock. Mind you, when I read some of the messages I was glad none of my enemies had thought to add a word! The soaking rain didn't really put a damper on things at all. You're coming from fabricated circuits to a natural circuit, set in that wonderful Ardennes scenery, and with more character and tradition than any other left in Formula One. In Grand Prix racing these days it's very difficult to find a circuit that's truly challenging, and — wet or dry — Spa is certainly that. There's the celebrated corner called Eau Rouge, which literally means



And PEI photographer Steven Tee's superb study of yours truly in action was a welcome gift to the magazine's star columnist! (LAT)

"Red Water": I reckon they should have re-christened it White Water this year! In the dry, it's flat in sixth; in the wet, it's flat in fifth — and that is one honky corner... The rest of the circuit is almost equally challenging. We thought the USF&G Arrows could be competitive there, and so it proved, thanks in part to the weather. When it rained for Friday's qualifying, I was sixth-quickest, ahead of many of the multi-cylinder-engined cars. So of course we were doing rain dances for Saturday's final qualifying session... but they didn't work, it stayed more or less dry, and we got caught out a little in setting the car up for those

changed conditions. That meant I started from tenth, a position made harder than it should have been by the torrential rain. When you are in a Grand Prix car at 170 mph on the straight in the pouring rain, with cars ahead of you, you really haven't much idea what's going on in front — you see a cloud of spray ahead and ask yourself if the guy in the middle of it has had a spin... The people at Spa had done a great deal of work to increase the safety angle, with wide run-off areas on some of the corners being particularly welcome. What they hadn't





Racing in the wet wasn't nearly as much fun...

(LAT)

done - and I suppose, in view of its traditions, couldn't do - was cut down the trees, which make the visibility aspect even tougher. Rain is fine if you practice in it, can give yourself a bit of breathing space, but in the race, up underneath someone else's gearbox, it's a different story. You must simply have blind faith in the men around you, and I have to say I was very impressed with the way everyone drove. Sure, there were the odd little incidents, but nothing dramatic, and I think that proved these guys are the best in the world. As for my own race, the car was excellent in the wet at the start, but began to handle less well as the track dried a little. I couldn't quite get on terms with Sandro Nannini, and there was a minor problem in the later stages with Andrea De Cesaris - he kept spinning in front of me, no fewer than three times! But I managed to miss him and go on to collect another point for sixth place, which was another special reason to remember Spa - it was my birthday, after all, and if you can't give yourself a present, who can? But I don't just want to finish sixth at the odd Grand Prix: I want to challenge for the rostrum - not inherit it, but challenge for it fair and square. And that's why the Italian Grand Prix at Monza was so important for me - because it brought the public announcement of my move, in 1990 to join Lotus.

When I was a kid, I can say with hand on heart that Ferrari and Lotus were the two teams I always looked to. Now - and I'm certainly not a kid anymore! - I'm a realist, and although the Lotus team's glittering history is important, what matters even more is the future, and working within a restructured team to make that future work.

The way I see things at the moment, we've very much got two divisions in



I'm only laughing because I can't understand what Martin has said! Seriously, I look forward to a great year with a rising star

(Sporting Pictures)

Formula One. In Division 1, the Hondas, Williams, Ferraris - and then Division 2, with USF&G Arrows, my current team, March, Benetton and others. We're very much on top of Division 2, which is very nice - but I feel it's time for the promotion to the premier league, if I can put it that way, and I believe Lotus is the place where I can achieve that. In fact I was first offered a drive at Lotus in 1984 and then almost joined them at the end of 1985, and last year too, so you could say Derek Warwick in a Lotus is long overdue.

You may remember I said at the time of the German Grand Prix that Hockenheim was the place where, traditionally, all the buzz begins about who's going where next year, and why - and for how much! Well, before Hockenheim I was already talking to several teams: Lotus, obviously, but I also had conversations with Williams, with Benetton - and to stay where I am was, I thought, not just a possibility but something more than that. Around Hockenheim things intensified, and after the German race I went to Lotus and spent two days looking around, talking to people, getting to

know Tony Rudd, Lotus Cars, Lotus Engineering - the group other than the racing team. And I've put a big emphasis on this: the group must join forces with the racing team, try and help it as much as possible. Because as I see it Lotus cars are sold by the Lotus Grand Prix team, people make them both one and the same. The alliance with Lamborghini engines is exciting too: like Lotus, they expect to sell glamorous road cars on the back of racing success, and wins are what we shall be going for as soon as humanly possible. Mauro Forghieri is probably the most successful Formula One engine builder of all time.

Obviously such questions as the Lamborghini's reliability are a problem, but I very much went into all that before I signed my contract and I'm happy that they're happy that they can supply two teams. If Lamborghini engines are blowing up right, left and centre, and getting blown off by Ferrari, it's not particularly good for their image, so I'm sure that will be taken care of.

Nice, too, to have a new young teammate in Ulsterman Martin Donnelly. He's someone I've watched come up, for a number of reasons. I was following Formula Three when he was doing well there, and my little brother Paul took over Martin's drive. I also noted the start to Martin's Formula 3000 career, when he took over from Johnny Herbert, grabbed it with both hands and won first time out at Brands Hatch. The guy is obviously good, to the point where, when I had my injury, they asked me who I wanted to stand in for me - and it was Martin's name I came up with. I know he's quick, and sensible, I knew he would bring my car home in one piece.

And - when I can understand his accent - I already have a good understanding with him! I said to him what I've said in this column before: in motor racing you spend 95% of your time out of the car, so you have to get on together, and I always make sure my teammate's very aware of that. I think I can teach him; I think that he looks upon me as someone who can help him become a star, so it would be great if we could do that. He's going to keep me on my toes, that's for sure - but don't worry, I'll keep him on his as well!

One of my options for next year was, of course, to stay with USF&G Arrows - and it would have been no hardship, because this team and sponsor have been good to me, and I'm very much part of the family. For the last two and a half, almost three years I have



Grouillard's Ligier wasn't the only problem I had in a short-lived Italian Grand Prix...

(LAT)

been with USF&G Arrows, and the team has developed from a top-10 to a top-5 team in that time. I'd like to think I had something to do with that. But the appeal of that fresh start was just too strong - and I'm glad I didn't have to base my decision on what happened to our team at Monza. We started off badly, and things never improved. First day, lots of problems, including a couple of tyre delaminations, a tyre blistering, never getting any consistent running. So we went into afternoon qualifying with a bit of an unknown package; my first lap was a 28.8, my second... Well, let me just say it was a commitment I was quite proud of. The two Lesmos were very exciting, and the Parabolica was fun as well! Anyway, I put in a 28.0, which was a little bit better, I think, than the car was prepared to do.

Next day it was wet in the morning; we fitted a new engine, but never really got it to run except when the rain stopped. Afternoon, I went out



Press conferences can be a little heavy...

(Sporting Pictures)

on my first set of tyres, the engine misfired, I did a 29.2 on five cylinders and we thought, "No problem!" But next time I went out it was just the same, so I never improved, Eddie Cheever didn't qualify, and it was just a bit of a disaster. I think we lost a bit of credibility - and it wasn't helped in the race itself. I had to retire after 18 laps as my engine kept cutting out with a fuel feed problem. One of those weekends you'd rather consign to history... I've still got a lot to achieve this year, but I already feel very enthusiastic about next year because all the ingredients are right.

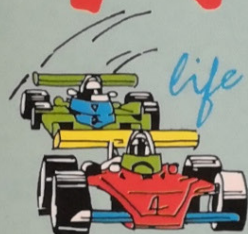
I'm a realist: I could say to you, we're going to be winning from the off, and all that sort of stuff, but the way I look at it is that 1990 is going to be a difficult year for us. New engine, new drivers... But what we have got is a long winter in which to get ourselves very much into shape, both physically and within the car and team, and I think we can go out there, run consistently in the top six and challenge for the podium. We're not going to win the first three races, or anything like that - but we can challenge for the podium, and that for me is a big step forward.

The days leading up to Monza were, of course, as hectic as ever: two days at Lotus, which was quite heavy negotiation with contracts and things; then, on the Friday in Jersey, we opened the new Honda dealership on the island of Jersey. You see, I was determined one way or another to get my hands on a multi-cylinder engine for next year! Seriously, it's a £400,000 investment, and for me it was a big occasion - and also quite a heavy day: lots of speeches, the big boss from Japan was over, and on Saturday and Sunday we had all the island's Honda owners come and see me. It seemed only appropriate to lighten things up a little, so when I was announced at the launch I decided to come on with complete overalls, bucket and sponge - as befits somebody looking after other people's motor cars! One way or another, water seems to be a recurrent theme in this column these days...

Hard to believe we're already preparing, as I write, for the last two European races of another season. Estoril and Jerez may not have the glamour of Monaco or the frenzy of Monza, but those two circuits could suit the thinking driver a lot better, and our car won't be at such a blatant power disadvantage: we might even be in the promotion stakes in the short term as well!



# PITFALLS

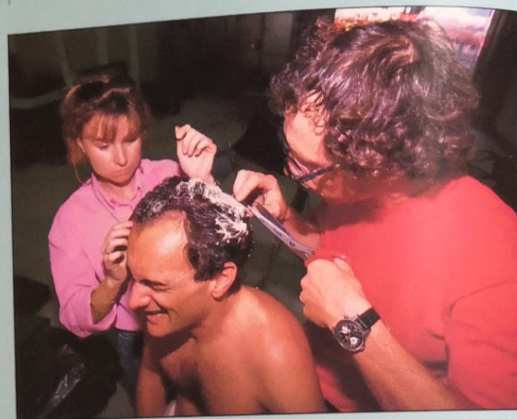


*life on the pit lane's lighter side*



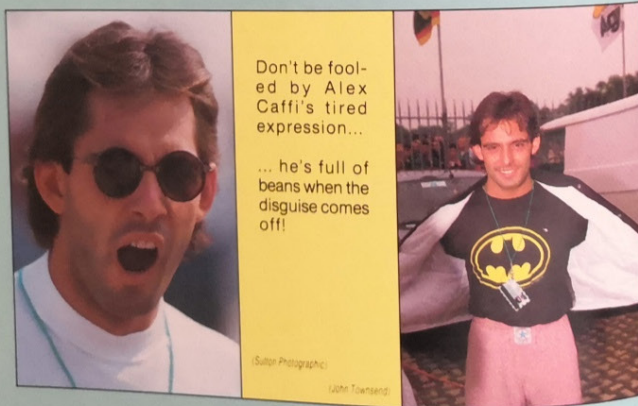
We know the Italians treat motor racing seriously as a latter-day religion, but was it necessary for this venerable man of cloth to lay down the law quite so forcibly?

*(Spring Pictures)*



Ouch! On the Thursday before Monza Grand Prix weekend, Gabriele Tarquini was being fitted for a seat in his AGS. At one point the likeable Italian sat forward, leaned back again - and squeezed some of the special chemical used for the moulding out over the top and on to his unsuspecting head. "Well", he managed to joke despite failing to pre-qualify, "nobody can blame me for not trying everything - even my haircut was aerodynamic!"

After announcing that he was moving to Ferrari next year, Alain Prost arrived in the garage to find his McLaren mechanics had placed a plate of pasta on the seat of his race car. Whether Alain ate the evidence is not known...



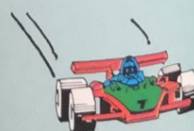
Don't be fooled by Alex Caffi's tired expression...

... he's full of beans when the disguise comes off!

*(Sutton Photography)*

*(John Townsend)*

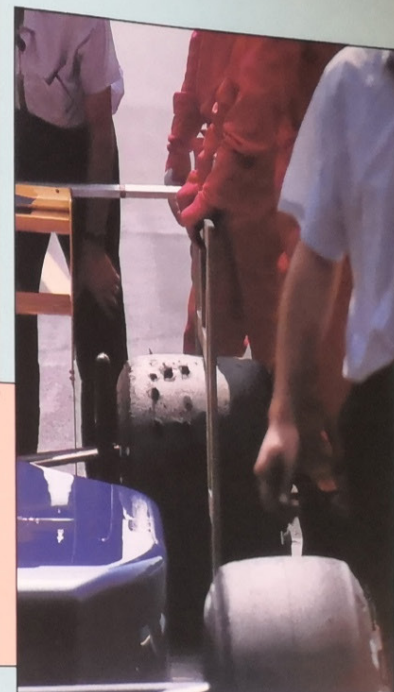
When Luis Perez Sala crashed heavily in Saturday practice at Monza, a medical safety car rushed to the scene spun three times when he tried to negotiate the first chicane. No-one was hurt.



*(Freemantle Speed)*

Genuine Pitfall, which might have been no joke: at Monza, Tyrrell driver Jean Alesi had his Friday qualifying times wiped out because of a technical infringement in the endplate of his 018's rear wing, here anxiously examined by Harvey Postlethwaite (centre, headphones on, bending).

The offending item was duly fixed, but Alesi's anxiety only ended when the threat of rain passed on Saturday and he qualified comfortably.



*(Freemantle Speed)*



Nelson Piquet may have found life with Lotus no joke lately, but as our picture shows, he retains his sense of humour - and even Ken Tyrrell seems to be enjoying this post-drivers' briefing embrace!

*(Spring Pictures)*

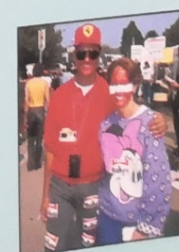
Were the team orders issued? Nelson Piquet's Lotus contract gives him number one status, but there was evidence: Satoru Nakajima was actually trying to knock his team leader out in the Spa garage (shades of the Senna-Mansell shoot-out a couple of years earlier). Surprised spectators were witnesses to a prank by two Lotus mechanics dressed up in the drivers' overalls and helmets. Said mechanics also signed "Nelson" and "Satoru" autographs for those who had still not got the joke.



One way - at Spa - of putting the sponsor's name forward...

*(Sutton Photography)*

A photographers' dinner at Monza gave some of that devious breed, including PEI's Keith Sutton and John Townsend, the chance to play a joke on fellow-lensman Nigel Snowden, whose birthday it was. The cunning cameramen told their Italian host Snowden was celebrating birthday number 64, and his 40th year in Formula One. Unsuspecting host made formal announcement in native tongue, Nigel smiled and bowed. In fact the lad is not a day over 63... Seriously, PEI contributor Nigel took it all in good part - didn't he?



Nothing like pinning your colours to the mast...





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If you haven't managed parts 1 and 2, don't despair: correct answers to part 3 on its own entitle you to a place in the draw for the superb Williams-Renault clothing.

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### Round 3

- Who was:  
(a) the youngest ever winner of a Grand Prix?  
(b) the oldest ever winner of a Grand Prix?

- Which current Grand Prix driver has had the lowest ratio of points per Grand Prix contested?
- Who is the only driver with a career total of  $\frac{1}{2}$  a World Championship point?
- Where and when was that  $\frac{1}{2}$  point earned?
- Name the race and year of the last Grand Prix won by a Brazilian driver other than Senna or Piquet.
- How many Grands Prix have been held in Portugal including 1989?
- At which circuits?
- Who provided the engine for the Spirit Team in 1983?
- Which country, at the start of 1989 boasted the highest number of Grand Prix winners?

- World Champions: 8, 6, 6, 5, 3, 3, 3, 2, 2, 1.  
How have we arrived at this breakdown?

Please send entries to:  
The Ultimate GP Quiz Part 3,  
First Frost Ltd,  
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Windsor Avenue,  
Wimbledon SW19 2SE.

Please remember to print your name and address.

Entries close on Wednesday, 15th November 1989. The prize draw will take place on Thursday 16th November 1989 and the winner will be notified direct by PEI.



(Albert Fozz/Rondeau)

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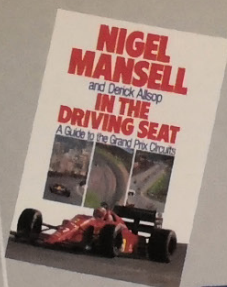
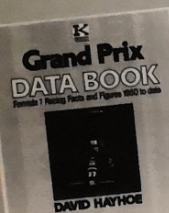
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# SPEED READING

**GRAND PRIX DATA BOOK:**  
Formula 1 Racing Facts and  
Figures 1950 to date,  
by David Hayhoe.  
Sparkford, Haynes Publishing  
Group. 205 pages, £12.95

Broadly speaking, Grand Prix fans divide into two camps: those who love the spectacle of speed, and those who prefer fast answers to questions such as who, what, where, when and why? Like crick-

et, or golf, motor racing is obsessed with statistics: fastest this, slowest that, most of those, fewest of them... David Hayhoe's book is, in many ways, the answer to a statistician's dream. Driver by driver — of those currently in F1 action — and team by team, it analyses records up to the end of the 1988 season. Which current driver won the German Alfusud Trophy in 1981? Or the Macau Grand Prix in 1985? Who drove for eight F1 teams in as many seasons? Which team's address is Via Ascari 55/57? Where should you write to apply for autographs of a Minardi driver, or pictures of your favourite star? All that information is here, and if basic informa-

**IN THE DRIVING SEAT:**  
Nigel Mansell and Derick Allsop.  
London, Stanley Paul, 174 pages,  
£15.95

There was a mixed reception for the biography of Nigel Mansell produced by this partnership in 1988. It is all the more pleasing to report that this is an altogether happier product of their collaboration, a readable, informative and consistently entertaining description of the current Grand Prix circuits — and some no longer visited — from the point of view of a front-rank driver and a highly observant F1 journalist. The book takes each of the World Championship venues in turn. Derick Allsop, his descriptive talent freed from the shackles of biographical narrowness, first provides his own view of each, with entertaining and informative historical

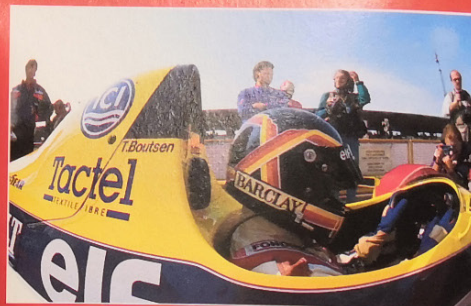
information; then Nigel Mansell adds his own impressions of that particular venue, before embarking upon a 'flying lap' illuminated by clear and readable diagrams. Each section is completed by a 'fact file' of lap records, previous winners, and the achievements of Mansell himself upon a given track. The book's basic appeal is founded on Allsop's own lightness of touch, and a sense of humour that is typical of the man himself. Writing in short, sharp bursts is clearly suited to the journalist's observational skills, his eye for the relevant and telling detail. The driver, too, knows when to be light-hearted, and when to introduce a sombre note. Can you imagine coming out of the Monaco tunnel at 190 mph? Or taking that extraordinary turn on to the pit straight in Mexico? 'We all earn our money on that corner alone', claims Mansell, and it would be a brave man who would take issue. How ironic it is, on return from this year's Portuguese Grand Prix, to read Nigel's description of that main pit straight as

information is what you seek, look no further. The book also offers a World Championship survey, with qualifying performances, top six, and so on from 1988 backwards, and a table of individual performances year by year, as well as a 'Greatest Achievements' section. While it may satisfy the limited palate of the statistician, this volume misses out drastically on the life-blood of the sport: its colour, its variety, its infinite visual appeal. Not only are there no photographs or illustrations, there is not the simplest graphic device to break up the slabs of raw data. Comprehensive it is, fun it isn't: it may take its place on your shelf, but it may not be taken down too often...

'obviously an opportunity for overtaking' — but that is an irony the authors could never have envisaged; and it is an unfortunate fact of publishing life that they could not wait for the first-ever race at Phoenix before the volume went to press. These are minor quibbles, just as is the disappointment that a man whose middle name, like Derick's, is Dino, could not get the spelling of Giuseppe Farina right! If Harry Clow's paintings make little impact on the reader, the use of photographs is much more intelligent, lending the book a sense of space, of panorama, even though the physical reproduction of those pictures may be less than perfect. Here, as in the text itself, there is a happy blend of the historical and contemporary, which reflects the success of the book as a whole: while there may be much talk of ratios, there is also a sense of proportion and balance that makes this a most enjoyable expression of a working partnership between one who does and one who describes.

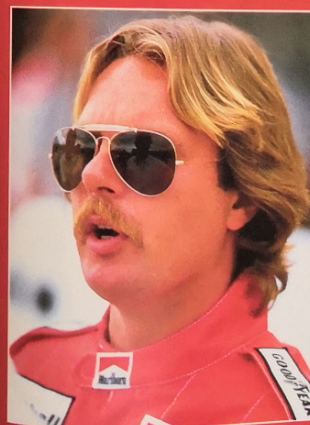
# IN THE NEXT ISSUE

Last issue of the season coming up! And the last issue to be decided, as this one went to press, was whether the pursuing Senna could catch Prost as the McLaren duo chased the World Championship. Our next number reviews the 1989 Formula One season - with all the downs as well as the ups.

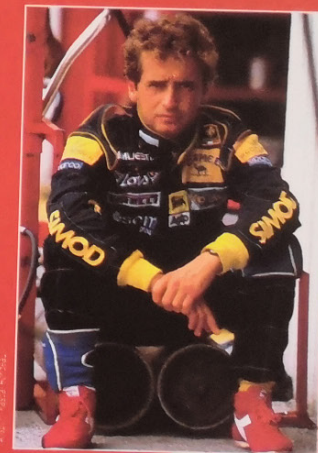


The 1989 season brought major triumph for Thierry Boutsen - his first Grand Prix win, in Canada. In a wide-ranging interview, PEI columnist Maurice Hamilton probes behind that calm exterior: the disappointments, what it meant to become a Williams driver, and life outside a Grand Prix cockpit.

Looking purposeful: Pierluigi Martini has been one of the revelations of the 1989 season with his tigerish drives for Minardi - and he has shown his loyalty by re-signing for next season. PEI finds out a little more about the man behind the determined mask.



Rocky Road: in our World Champions series, we look at the career and charisma of Keke Rosberg, perhaps the last driver who could genuinely electrify a Grand Prix crowd - and one with some very firm opinions about the sport as he sees it now.



Remember Rio earlier this year? Popular French driver Philippe Streiff was grievously injured when his AGS crashed in pre-season testing. How has his wife Renee coped? What does the future hold for Philippe? PEI went to Paris for an exclusive insight into the price Grand Prix racing exacts.

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